

NASA Contractor Report 168106

Flight Summaries and Temperature Climatology at Airliner Cruise  
Altitudes from Gasp Data

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*Corrected Copy*

February 1985

Prepared for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
Lewis Research Center  
Under Contract NAS 3-21249

## 1. Introduction

Temperature in the atmosphere varies with latitude, season and height above the earth's surface. Temperature in the troposphere, the layer of the atmosphere closest to the earth, tends to decrease with height. In the lower stratosphere, the next higher layer, the temperature tends to remain constant to slowly rising with height. The coldest temperatures are found at or slightly above the tropopause, the imaginary surface separating the troposphere and the stratosphere.

The tropopause acts as a lid on the lower atmosphere, constraining all of what is commonly referred to as weather to the troposphere. The height of the tropopause varies with time and latitude but on the average is located at about 7 km near the poles to about 17 km at the equator. This general description is illustrated in Figure 1, where the tropopause is given as a heavy line. Note that above 30-40,000 feet (9-12 km) the coldest temperatures often can be found over the tropics.

Aircraft, in particular commercial aircraft, often fly near the tropopause, the level of minimum temperature. The temperatures to which an aircraft is exposed are of concern for problems such as the use of high freeze-point fuels. The purpose of this report is to present aircraft flight summaries of static air temperature and a geographical climatology of temperature compiled from data obtained during the Global Atmospheric Sampling Program. Appendix A describes the method used to obtain statistically inde-

pendent temperature observations from each flight while Appendices B and C present the flight summaries and geographical climatology, respectively.

## 2. Data

The NASA Global Atmospheric Sampling Program (GASP) ran from March 1975 to July 1979. During this program, four commercial B747 aircraft in routine service were instrumented to obtain measurements of aerosols, trace constituents and meteorological variables (refs. 1 and 2). The GASP system was automated to record data at nominal 5 minute intervals during flight above FL190 (19000 ft.; to be consistent with usual airline terminology, altitudes will hereafter be given in FL's). When turbulence was encountered, or on entire selected flights, data were recorded at 4-second intervals (ref. 3), but for this study only 1-minute interval data were retained. Temperature data were recorded in whole degrees celsius.

The data set used in this study consists of 6945 flights covering 273 different routes. Most of these routes are in the United States (including Hawaii) or are from the U. S. to Europe or to Japan. However, there also are numerous flights from the Northern Hemisphere to the Southern Hemisphere, within the Southern Hemisphere, between cities along the southern rim of Asia, and even some into Africa. The airports visited and their locations are listed in Table 1, and Table 2 presents a breakdown of the number of times each route was flown in either direction by month, in decreasing order of total flights.

### 3. Flight Summaries

Flight altitudes and temperatures along two GASP flights are given in Figure 2. Note that the flight altitudes are generally constant along relatively long legs, or segments, separated by relatively rapid ascent (descent) periods. This feature is typical of the flight altitude profiles for long duration flights (altitude profiles for all GASP flights on which cabin ozone was measured are given in refs. 4-6). In Figure 2, the average temperature along each altitude segment is plotted as a horizontal line, and a vertical line extends one standard deviation above and below the mean temperature. In the SFO-LHR flight in Figure 2, note that the temperature increases from the first to the second segment even though the flight level goes up from FL370 to FL390. This increase arises because the airliner is in the stratosphere in the second (and third) segment of this flight, and illustrates the coldest temperatures are often found very near the tropopause. Note that for both flights the segment means and standard deviations capture the salient features of temperature variability along each flight. The segment statistics, along with those for the entire route, for all GASP flights are given in Appendix B as discussed below.

Flight summaries are provided in Appendix B for all flights which had at least one hour of data at or above FL270. For ease of identifying particular flight routes, the routes have been alphabetically ordered with respect to the departure and arrival airports.



The route, date, number of observations and flight duration are provided in the first part of the summary. The coldest static (ambient) temperature observed, its associated flight level, latitude and longitude and time into the flight are shown in the next section followed by the mean flight level, mean temperature and the temperature standard deviation of all data above FL270. The last section of the table provides a breakdown of the temperature, flight level, standard deviation and duration for each flight segment. A flight segment is defined as any segment of the flight in excess of one hour during which the flight level changed by less than  $\pm 500$  feet. Some of the flights contain several flight segments, while for some flights no single segment met these criteria. On some flights time was missing from the GASP data records and in these cases the elapsed time was estimated using position data and a mean flight speed.

#### 4. GASP Temperature Climatology

All climatological summaries should be based on statistically independent or properly weighted data to avoid biasing the results toward a particular time or situation. Temperature fields in the upper atmosphere are usually relatively smooth, dominated by large-scale troughs and ridges, so most of the variance in the fields can be described by samples taken every few hundred kilometers. In an effort to use only statistically independent observations in this study, the average distance between independent observation was estimated and then used to select samples along

each GASP flight. Details of this analysis are given in Appendix A. Based on this analysis, temperature observations can be considered to be independent if they are separated by 500 km in the troposphere or by 700 km in the stratosphere. Because one of the applications of the climatology presented in this report concerns the use of high freeze-point fuels, the minimum temperature in each of the 500 km or 700 km flight segments was used as the temperature representative of that segment.

Appendix C presents the GASP climatology of all the independent temperature data. In all, there are 100,693 observations. The grid used consists of  $5^{\circ}$  latitude,  $30^{\circ}$  longitude and 2000 feet vertical spacing from FL270 to FL430 for each month of the year. The mean and standard deviation for the N independent temperature observations are given for each grid box. In addition, the empirical 98, 50, 16, 2, and .3 probability percentiles were computed and are presented. These numbers represent the temperature for which the probability is x% that the temperature will be colder. All of the numbers in each grid box with the exception of N are given in tenths of degrees celsius (i.e., tabulated numbers =  $10 * ^{\circ}\text{C}$ ).

## 5. Summary

Temperature data obtained by the Global Atmospheric Sampling Program (GASP) during the period March 1975 to July 1979 have been compiled to form flight summaries of static air temperature and a geographic temperature climatology. The flight summaries

include the height and location of the coldest observed temperature and the mean flight level, temperature and the standard deviation of temperature for each flight as well as for flight segments. These summaries are ordered by route and month. The temperature climatology was computed for all statistically independent temperature data for each flight. The grid used consists of  $5^{\circ}$  latitude,  $30^{\circ}$  longitude and 2000 feet vertical resolution from FL270 to FL430 for each month of the year. The number of statistically independent observations, their mean, standard deviation and the empirical 98, 50, 16, 2 and .3 probability percentiles are presented.

## References

1. Perkins, P. J.: Global Measurements of Gaseous and Aerosol Trace Species in the Upper Troposphere and Lower Stratosphere from Daily Flights of 747 Airliners. NASA TM X-73544, 1976.
2. Perkins, P. J. and L. C. Papathakos: Global Sensing of Gaseous and Aerosol Trace Species Using Automated Instrumentation on 747 Airliners. NASA TM-73810, 1977.
3. Holdeman, J. D. and E. A. Lezberg: NASA Global Atmospheric Sampling Program (GASP) Data Report for Tape VL0001. NASA TM X-71905, 1976.
4. Perkins, P. J., J. D. Holdeman and G. D. Nastrom: Simultaneous Cabin and Ambient Ozone Measurements on Two Boeing 747 Airplanes, Volume I. FAA-EE-79-05 (also NASA TM-79166), Department of Transportation, 1979.
5. Holdeman, J. D., L. C. Papathakos, G. F. Higgins, and G. D. Nastrom. Simultaneous Cabin and Ambient Ozone Measurements on Two Boeing 747 Airplanes, Volume II - January to October 1978. NASA TM-81733, 1982.
6. Papathakos, L. C. and W. H. Jasperson: Simultaneous Cabin and Ambient Ozone Measurements on Two Boeing 747 Airplanes, Volume III - October 1978 to July 1979. NASA Technical Memorandum (in preparation), 1983.
7. Byers, H. R.: General Meteorology. New York: McGraw-Hill, 1959.
8. Leith, C.: The Standard Error of Time-Average Estimates of Climatic Means. J. Appl. Meteor., 12, 1066-1069, 1973.

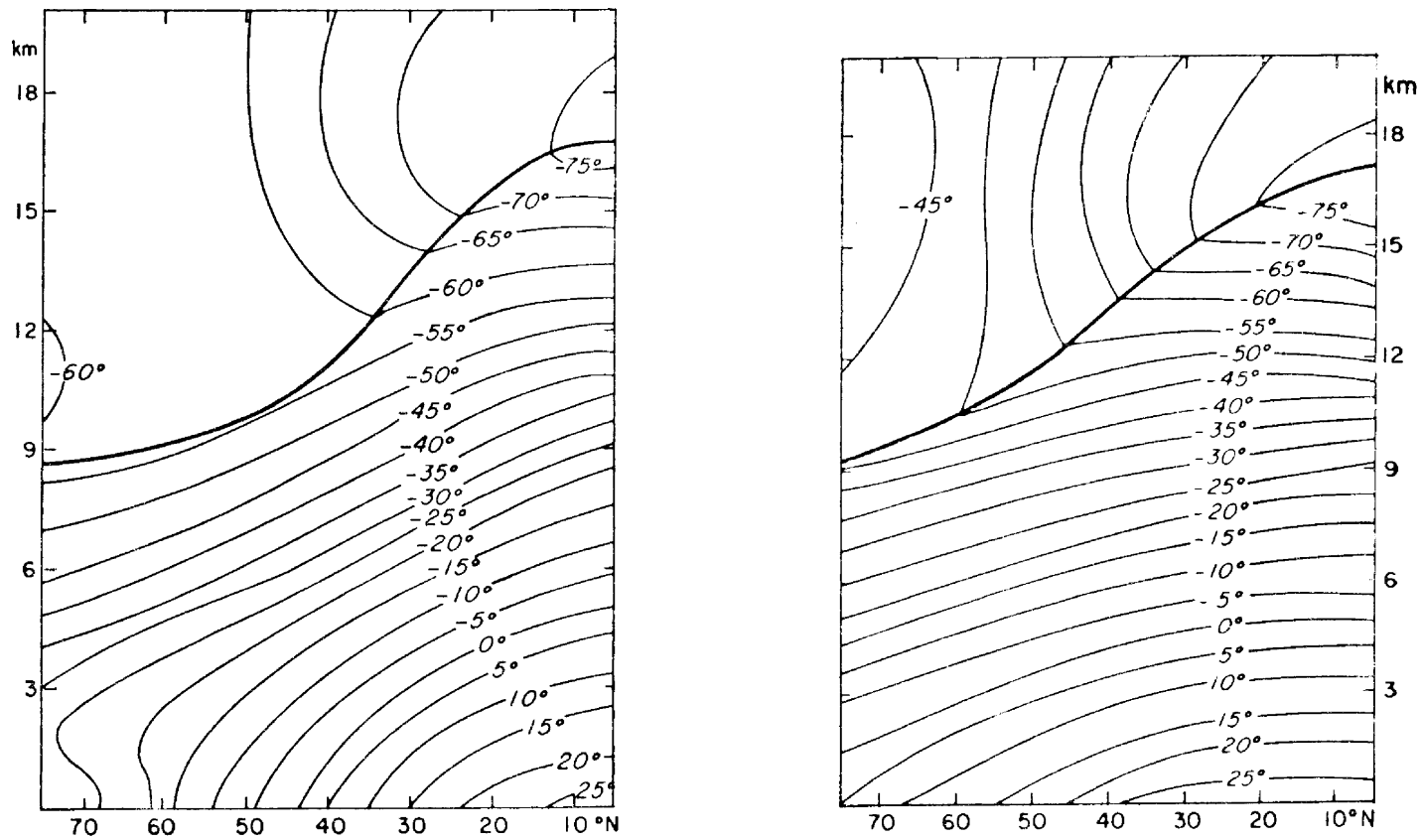


Figure 1. Vertical cross sections of the meridional distribution of temperatures in winter (left) and summer (right). (Figures adapted from ref. 7, fig. 4.1.)

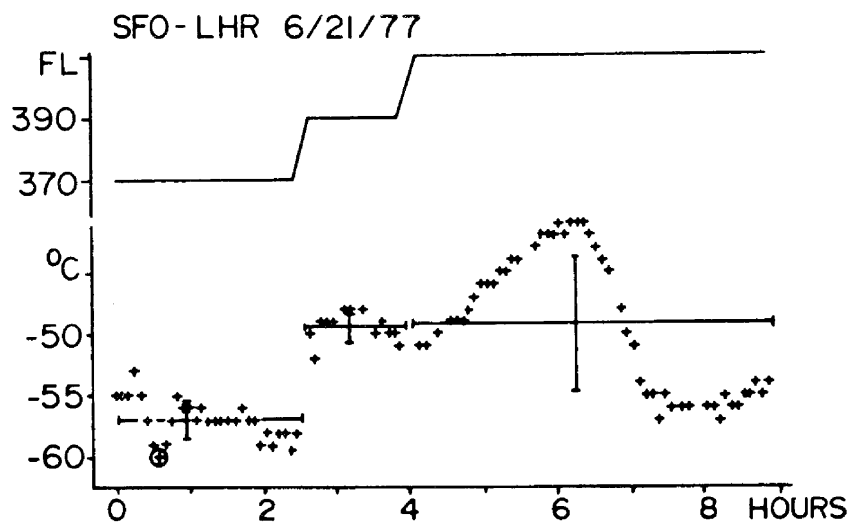
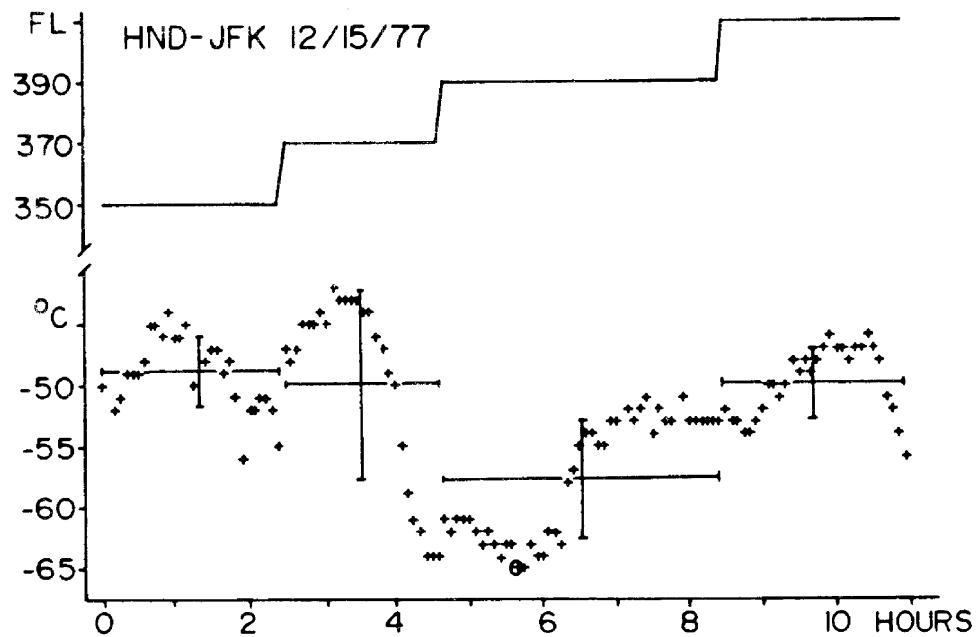


Figure 2. Flight level and static air temperature for flights from Tokyo to New York (upper) and San Francisco to London (lower). Small crosses depict observed temperature along flight segments and vertical bars extend one standard deviation above and below the mean. The coldest temperature on each flight is circled.

TABLE 1  
AIRPORT/CITY CODES AND LOCATIONS

<u>CITY</u>	<u>LAT.</u>	<u>LONG.</u>
ACA - Acapulco, Mexico	16.75N	99.76W
AKL - Auckland, New Zealand	37.03S	174.81E
AMS - Amsterdam, Netherlands	52.30N	4.76E
ANC - Anchorage, Alaska	61.17N	149.98W
ATH - Athens, Greece	37.96N	23.73E
BAH - Bahrain Is., Arabian Gulf	26.00N	50.60E
BDA - Bermuda, Atlantic Ocean	32.36N	64.63W
BEG - Belgrade, Yugoslavia	44.82N	20.30E
BEY - Beirut, Lebanon	33.82N	35.49E
BGR - Bangor, Maine	44.81N	68.82W
BKK - Bangkok, Thailand	13.90N	100.60E
BNE - Brisbane, Australia	27.44S	153.12E
BOM - Bombay, India	19.15N	72.86E
BOS - Boston, Mass.	42.36N	71.01W
BRU - Brussels, Belgium	50.90N	4.49E
CCS - Caracas, Venezuela	10.62N	66.97W
CGN - Cologne, Germany	50.93N	7.32E
CHC - Christchurch, New Zealand	43.51S	172.52E
CLE - Cleveland, Ohio	41.41N	81.84W
CPH - Copenhagen, Denmark	55.54N	12.81E
CPT - Capetown, South Africa	33.90S	18.68E
CTS - Sapporo, Japan	42.80N	141.67E
CUN - Cancun, Mexico	21.03N	86.88W
CUR - Curacao, Neth. Antilles	12.25N	68.91W
DAM - Damascus, Syria	33.50N	36.50E
DEL - Delhi, India	28.56N	77.12E
DEN - Denver, Colorado	39.76N	104.89W
DFW - Dallas/Ft. Worth, Texas	32.88N	97.03W
DHA - Dhahrain, Saudi Arabia	26.28N	50.17E
DRW - Darwin, Australia	12.36S	130.89E
DTW - Detroit, Michigan	42.24N	83.39W
DUB - Dublin, Ireland	53.44N	6.26W
EZE - Buenos Aires, Argentina	34.81S	58.53W
FAI - Fairbanks, Alaska	64.82N	147.86W
FCO - Rome, Italy	41.80N	12.25E
FRA - Frankfurt, Germany	50.05N	8.58E
GIG - Rio de Janeiro, Brazil	22.84S	43.20W
GUA - Guatemala City, Guatemala	14.59N	90.52W
GUM - Guam Island, Mariana Islands	13.41N	144.80E
HKG - Hong Kong, Hong Kong	22.33N	114.21E
HND - Tokyo, Japan	35.54N	139.77E
HNL - Honolulu, Hawaii	21.33N	157.92W
IAD - Washington, D.C.	38.94N	77.44W
IAH - Houston, Texas	29.49N	95.28W
IST - Istanbul, Turkey	40.98N	28.83E

TABLE 1 (cont'd)

ITO - Hilo, Hawaii	19.64N	155.03W
JFK - New York, New York	40.63N	73.77W
JNB - Johannesburg, South Africa	26.12S	28.22E
KHI - Karachi, Pakistan	24.90N	67.15E
KUL - Kuala Lumpur, Malaysia	3.12N	101.66E
LAS - Las Vegas, Nevada	36.08N	115.15W
LAX - Los Angeles, California	33.95N	118.40W
LHR - London, England	51.47N	.43W
LPA - Las Palmas, Canary Island	27.94N	15.39W
MEL - Melbourne, Australia	37.67S	144.84E
MEX - Mexico City, Mexico	19.45N	99.05W
MIA - Miami, Florida	25.79N	80.27W
MIQ - Caracas, Venezuela	10.60N	66.99W
MNL - Manila, Philippines	14.49N	121.02E
MRU - Mauritius, Indian Ocean	20.45S	57.68E
MUC - Munich, Germany	48.08N	11.60E
NAN - Nandi, Fiji Island	17.75S	177.46E
NCE - Nice, France	43.57N	7.41E
NOU - Noumea, New Caledonia	22.01S	166.24E
NRT - Tokyo, Japan	35.72N	140.32E
OKA - Okinawa, Japan	26.20N	127.63E
OMA - Omaha, Nebraska	41.34N	95.89W
ORD - Chicago, Illinois	41.97N	87.90W
OSA - Osaka, Japan	34.78N	135.42E
ORY - Paris, France	48.77N	2.38E
PDX - Portland, Oregon	45.85N	122.47W
PER - Perth, W. Australia	31.92S	115.94E
PHL - Philadelphia, Pennsylvania	39.90N	75.07W
PIK - Glasgow, Scotland	55.60N	4.70W
PPG - Pago Pago, Samoa	14.06S	170.68W
PPT - Papeete, Tahiti	17.55S	149.60W
PTY - Panama City, Panama	9.08N	79.38W
SEA - Seattle, Washington	47.44N	122.30W
SFO - San Francisco, California	37.61N	122.39W
SIN - Singapore, Singapore	1.44N	103.85E
SNN - Shannon, Ireland	52.69N	8.91W
STL - St. Louis, Missouri	38.75N	90.36W
STR - Stuttgart, Germany	48.55N	9.21E
SYD - Sydney, Australia	33.87S	151.34E
THR - Tehran, Iran	35.68N	51.31E
TPE - Taipei, Taiwan	25.07N	121.54E
VIE - Vienna, Austria	48.11N	16.58E
YQX - Gander, Newfoundland, Canada	48.98N	54.50W
YVR - Vancouver, B.C. Canada	49.20N	123.18W
YYZ - Toronto, Ontario, Canada	43.67N	79.61W



Table 2

## ROUTE-FLIGHT SUMMARY

	ROUTE		LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
1	HNL	SFO	21.3N	157.9W	37.6N	122.4W	68	56	32	61	37	50	42	23	35	32	24	55	515
2	LAX	HNL	33.9N	118.4W	21.4N	157.9W	27	42	31	37	34	57	66	35	19	15	28	43	434
3	SYD	MEL	33.9S	151.2E	37.7S	144.8E	22	25	5	10	13	17	24	30	4	14	19	25	208
4	JFK	HND	40.6N	73.8W	35.5N	139.8E	10	20	24	36	13	4	13	13	21	19	25	8	206
5	LHR	JFK	51.5N	.4W	40.6N	73.8W	12	10	26	14	19	12	13	10	28	26	8	7	185
6	LAX	JFK	34.0N	118.4W	40.6N	73.8W	17	24	20	15	13	32	12	6	4	8	14	15	180
7	HND	LAX	35.5N	139.8E	34.0N	118.5W	10	19	22	37	6	3	10	12	18	21	10	7	175
8	ORD	HNL	42.0N	87.9W	21.3N	157.9W	10	9	23	19	19	22	22	9	13	7	5	12	170
9	SFO	LAX	37.6N	122.4W	34.0N	118.4W	21	10	16	14	18	15	18	20	14	7	5	7	165
10	LAX	ORD	33.9N	118.4W	42.0N	87.9W	12	17	18	14	14	16	14	11	8	5	6	22	157
11	SYD	AKL	33.9S	151.2E	37.0S	174.8E	9	16	4	9	15	15	13	8	4	15	9	31	148
12	JFK	SFO	40.6N	73.8W	37.6N	122.4W	18	7	11	13	15	12	9	14	9	11	5	22	146
13	JFK	FRA	40.6N	73.8W	50.1N	8.6E	10	5	20	16	12	2	3	8	22	14	8	2	122
14	NAN	SYD	17.8S	177.5E	34.0S	151.2E	16	7	5	10	5	9	9	6	10	14	5	18	114
15	ORD	JFK	42.0N	87.9W	40.6N	73.8W	9	8	9	5	9	12	13	9	5	8	4	10	101
16	HNL	NAN	21.3N	157.9W	17.8S	177.5E	10	7	5	6	3	10	7	6	10	12	5	16	97
17	SFO	ORD	37.6N	122.4W	41.9N	87.9W	9	5	5	17	4	12	7	6	9	7	1	11	93
18	NRT	JFK	35.8N	140.4E	40.6N	73.9W	11	9	2	10	2	15	9	8	8	8	2	9	93
19	LHR	AMS	51.5N	.4W	52.3N	4.8E	3	0	4	3	8	7	18	6	16	14	5	4	88
20	LHR	FRA	51.5N	.5W	50.1N	8.6E	7	8	10	5	11	7	2	5	5	9	8	5	82
21	LAX	DEN	33.9N	118.4W	39.7N	104.9W	3	6	10	9	7	6	8	2	4	7	9	8	79
22	HNL	GUM	21.3N	157.9W	13.4N	144.8E	0	1	6	15	13	3	12	5	0	1	4	8	68
23	LAX	GUA	34.0N	118.4W	14.6N	90.5W	10	0	10	10	14	4	8	8	2	0	2	0	68
24	LAX	ITO	34.0N	118.4W	19.6N	155.0W	5	7	6	5	7	8	4	8	3	1	3	8	65
25	SYD	HNL	33.9S	151.2E	21.4N	157.9W	14	16	1	7	2	2	0	0	12	5	0	0	59
26	LAX	NRT	34.0N	118.4W	35.7N	140.3E	6	6	1	3	4	10	4	6	6	4	2	7	59
27	JFK	FCO	40.7N	73.8W	41.8N	12.3E	4	2	4	4	4	5	2	5	12	4	6	7	59
28	SEA	LHR	47.4N	122.3W	51.5N	.2W	1	2	10	7	0	18	2	1	2	7	1	7	58
29	LAD	LHR	38.9N	77.4W	51.5N	.5W	2	0	3	5	5	4	6	2	13	9	5	3	57
30	NRT	SFO	35.8N	140.4E	37.6N	122.2W	8	5	2	6	4	7	5	4	4	6	2	4	57
31	LAX	LHR	34.0N	118.4W	51.5N	.5W	1	1	0	1	3	6	13	6	8	8	5	2	54
32	SYD	SIN	33.9S	151.2E	1.4N	103.9E	8	3	2	2	4	1	3	6	2	5	10	7	53
33	LAX	AKL	34.0N	118.4W	37.2S	174.8E	3	4	0	3	6	6	7	2	0	7	2	11	51
34	SFO	HKG	37.6N	122.4W	22.3N	114.1E	12	7	0	5	7	5	0	7	7	0	0	1	51
35	SFO	HND	37.6N	122.4W	35.5N	139.8E	4	2	8	9	8	2	1	2	2	11	0	2	51
36	THR	FRA	35.7N	51.3E	50.0N	8.6E	1	4	3	4	5	6	2	5	4	9	3	4	50
37	PER	BOM	32.0S	116.0E	19.2N	72.9E	5	0	0	6	2	2	7	6	4	7	6	5	50
38	DEN	ORD	39.8N	104.9W	42.0N	87.9W	2	3	9	7	1	4	4	0	2	3	7	6	48
39	HKG	SIN	22.3N	114.2E	1.3N	103.9E	12	8	0	2	4	0	0	6	6	0	2	8	48
40	HKG	BKK	22.3N	114.2E	13.9N	100.6E	2	2	8	5	2	4	1	6	5	9	1	3	48

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

	ROUTE	LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
41	LHR BOS	51.5N	.5W	42.4N	71.0W	0	0	2	1	5	0	4	2	11	20	0	2	47
42	ORD YYZ	42.0N	87.9W	43.7N	79.6W	8	4	8	4	6	0	0	2	4	2	0	8	46
43	BOM LHR	19.1N	72.9E	51.5N	.5W	5	0	0	6	2	1	7	6	4	6	4	5	46
44	GUM MNL	13.5N	144.8E	14.5N	121.0E	0	2	6	8	6	2	8	3	0	1	3	6	45
45	LHR BRU	51.5N	.4W	50.9N	4.5E	3	3	3	4	3	0	8	4	7	6	4	0	45
46	HNL PPG	21.3N	157.9W	14.1S	170.7W	1	2	2	0	9	6	4	7	0	1	3	8	43
47	JFK BAH	40.7N	73.8W	26.0N	50.6E	9	2	2	0	2	2	2	4	2	4	5	9	43
48	ORD PIT	42.0N	87.9W	40.5N	80.2W	2	2	0	2	8	4	4	6	5	0	2	8	43
49	THR DEL	35.7N	51.3E	28.6N	77.1E	2	2	6	4	4	4	2	3	2	8	0	4	41
50	MNL HKG	14.5N	121.0E	22.3N	114.2E	4	4	4	2	0	2	6	3	1	6	5	4	41
51	MEL PER	37.7S	144.9E	32.0S	116.0E	2	4	2	4	2	3	7	3	2	3	4	4	40
52	BOS DTW	42.4N	71.0W	42.2N	83.4W	0	0	2	2	4	0	4	0	8	18	0	2	40
53	SFO LHR	37.6N	122.4W	51.5N	.5W	0	0	0	0	3	23	2	4	2	5	0	0	39
54	SIN BKK	1.4N	103.9E	13.9N	100.6E	2	5	2	0	5	3	4	2	0	2	8	4	37
55	HND HKG	35.5N	139.8E	22.3N	114.2E	2	4	8	3	1	2	1	3	2	9	0	2	37
56	SFO AKL	37.6N	122.4W	37.0S	174.7E	1	3	1	2	5	2	2	3	2	5	0	10	36
57	HNL SEA	21.3N	157.9W	47.4N	122.2W	0	3	5	8	3	6	4	0	0	0	2	5	36
58	SFO SEA	37.6N	122.4W	47.4N	122.3W	2	2	8	5	0	1	0	0	1	3	3	7	32
59	MEL SIN	37.7S	144.8E	1.2N	104.0E	0	2	0	0	5	4	3	5	0	4	4	5	32
60	SEA FAI	47.4N	122.3W	64.8N	147.9W	0	2	0	2	4	10	6	0	0	0	2	4	30
61	GIG JFK	22.8S	43.2W	40.7N	73.8W	1	4	4	8	3	0	1	2	0	0	7	0	30
62	ORD SEA	42.0N	87.9W	47.4N	122.3W	0	1	1	9	2	4	6	4	0	0	0	3	30
63	BKK DEL	13.9N	100.6E	28.6N	77.1E	2	0	8	4	0	0	1	3	1	7	0	3	29
64	HNL HND	21.3N	157.9W	35.6N	139.8E	0	3	2	0	6	6	4	1	0	0	2	4	28
65	GUA CCS	14.6N	90.5W	10.6N	67.0W	4	0	0	8	3	0	6	4	1	0	2	0	28
66	BOM BAH	19.1N	72.9E	26.3N	50.6E	6	0	0	0	0	0	0	2	2	4	5	8	27
67	ORD LAS	42.0N	87.9W	36.1N	115.2W	3	0	8	3	6	2	0	0	2	2	0	0	26
68	KUL BAH	3.1N	111.7E	26.3N	50.6E	5	0	0	1	3	0	0	2	1	3	6	4	25
69	THR IST	35.7N	51.3E	41.0N	28.8E	2	1	4	0	0	0	2	3	1	0	6	6	25
70	ATH FCO	37.9N	23.7E	41.8N	12.3E	0	2	0	0	2	3	2	6	0	2	4	4	25
71	HKG NRT	22.3N	114.2E	35.7N	140.4E	2	3	1	1	4	5	1	1	2	2	1	2	25
72	FCO IST	41.8N	12.3E	41.0N	28.8E	2	2	2	0	0	0	2	3	1	0	6	7	25
73	SYD PER	33.9S	151.2E	31.9S	115.9E	5	0	0	2	0	1	1	4	2	4	3	2	24
74	LAD DTW	38.9N	77.4W	42.2N	83.4W	0	0	0	2	2	4	6	0	1	5	2	2	24
75	HKG DEL	22.3N	114.2E	28.6N	77.1E	2	5	2	1	3	5	1	1	1	2	0	1	24
76	PPG PPT	14.3S	170.7W	17.6S	149.6W	0	0	2	0	9	0	0	2	0	1	1	8	23
77	BAH SIN	26.3N	50.6E	1.2N	103.9E	1	0	0	1	1	2	2	7	1	4	0	4	23
78	NRT HNL	35.8N	140.4E	21.3N	157.9W	2	3	2	1	2	5	2	0	0	4	1	0	22
79	SIN KUL	1.4N	103.9E	3.1N	101.6E	4	0	0	0	3	0	0	2	1	3	5	4	22
80	ORD DTW	42.0N	87.9W	42.2N	83.3W	0	4	4	0	0	6	4	0	2	2	0	0	22

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

	ROUTE		LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
81	BKK	THR	13.9N	100.6E	35.7N	51.4E	0	3	2	1	2	2	0	4	1	2	3	1	21
82	ATH	BEG	37.9N	23.7E	44.9N	20.3E	0	0	4	2	0	0	2	4	0	2	2	4	20
83	JFK	CPH	40.7N	73.8W	55.5N	12.8E	0	0	0	0	0	0	6	8	6	0	0	0	20
84	BAH	FRA	26.3N	50.6E	50.0N	8.5E	4	2	2	0	4	0	0	0	1	1	5	1	20
85	SFO	YVR	37.6N	122.4W	49.2N	123.2W	4	2	0	2	0	2	0	0	4	5	0	0	19
86	SYD	LAX	33.9S	151.2E	33.9N	118.4W	4	0	0	1	1	3	1	2	0	2	1	4	19
87	BKK	ATH	13.9N	100.6E	37.9N	23.7E	0	0	0	0	0	0	4	7	0	0	2	6	19
88	ORD	CLE	42.0N	87.9W	41.4N	81.8W	1	0	5	6	4	2	1	0	0	0	0	0	19
89	MUC	FRA	48.1N	11.7E	50.0N	8.6E	1	2	2	2	4	0	2	0	4	2	0	0	19
90	JFK	IAH	40.6N	73.8W	29.5N	95.3W	2	2	2	0	2	0	0	2	4	3	2	0	19
91	SYD	MNL	34.0S	151.2E	14.6N	121.0E	4	2	0	0	0	0	2	2	2	5	1	0	18
92	PPG	SYD	14.3S	170.7W	33.9S	151.3E	2	2	0	0	0	6	4	4	0	0	0	0	18
93	BKK	BAH	13.9N	100.6E	26.3N	50.6E	2	3	2	0	4	0	0	1	0	0	5	1	18
94	THR	ATH	35.7N	51.3E	38.0N	23.7E	0	2	2	1	1	2	0	4	0	2	2	1	17
95	GUA	PTY	14.6N	90.5W	9.1N	79.4W	2	0	3	2	4	0	0	4	1	0	0	0	16
96	SYD	CHC	33.9S	151.2E	43.5S	172.5E	6	2	0	2	0	0	0	2	0	0	0	4	16
97	CCS	GIG	10.6N	67.0W	22.8S	43.2W	3	0	2	6	2	0	0	2	1	0	0	0	16
98	JFK	DFW	40.6N	73.8W	32.9N	97.0W	0	0	2	2	6	0	0	0	0	0	0	6	16
99	KHI	THR	24.9N	67.2E	35.7N	51.3E	0	1	2	0	0	2	0	4	1	1	2	2	15
100	AKL	MEL	37.0S	174.8E	37.7S	144.8E	5	6	1	0	0	0	0	0	0	0	0	2	14
101	AMS	BAH	52.3N	4.8E	26.1N	50.6E	2	0	0	0	1	0	0	2	0	1	6	2	14
102	PTY	GIG	9.1N	79.4W	22.8S	43.3W	2	0	2	2	3	0	0	4	1	0	0	0	14
103	DFW	HNL	32.9N	97.1W	21.3N	157.9W	0	0	2	0	6	0	0	0	0	0	0	6	14
104	HNL	OSA	21.3N	157.9W	34.8N	135.4E	2	4	1	1	2	0	0	0	0	2	2	0	14
105	OKA	TPE	26.2N	127.7E	25.1N	121.6E	0	0	0	5	1	1	4	2	0	0	0	0	13
106	JFK	DHA	40.6N	73.8W	26.3N	50.2E	0	8	0	4	0	1	0	0	0	0	0	0	13
107	SYD	DRW	33.9S	151.2E	12.4S	130.9E	0	0	3	3	0	0	0	3	0	2	2	0	13
108	DRW	BKK	12.4S	130.9E	14.0N	100.7E	0	0	3	3	0	0	0	2	0	2	2	0	12
109	GUM	OKA	13.5N	144.8E	26.2N	127.6E	0	0	0	4	1	1	4	2	0	0	0	0	12
110	CLE	MIA	41.4N	81.8W	25.8N	80.3W	0	0	12	0	0	0	0	0	0	0	0	0	12
111	THR	BOI	35.7N	51.3E	19.1N	72.9E	1	1	0	0	0	0	2	2	0	0	2	4	12
112	SYD	HKG	33.9S	151.2E	22.5N	114.2E	0	0	2	0	2	0	2	2	2	1	1	0	12
113	HNL	PDX	21.3N	157.9W	45.9N	122.5W	0	0	0	0	2	4	2	0	0	4	0	0	12
114	GIG	VCP	22.8S	43.3W	23.0S	47.2W	2	0	0	2	6	0	0	0	2	0	0	0	12
115	AKL	HNL	37.0S	174.8E	21.3N	157.9W	1	1	0	2	2	1	2	1	0	0	1	0	11
116	BAH	LHR	26.3N	50.6E	51.5N	.5W	0	0	0	0	0	0	2	6	0	0	1	2	11
117	LAX	PPT	34.0N	118.4W	17.4S	149.6W	0	0	0	0	3	0	0	4	0	1	1	2	11
118	SYD	NOU	33.9S	151.2E	22.0S	166.2E	1	0	0	0	0	0	0	2	0	4	2	2	11
119	BKK	DAM	13.9N	100.6E	33.5N	36.5E	0	0	1	2	1	0	0	1	0	2	2	1	10
120	DAM	ATH	33.5N	36.5E	37.9N	23.7E	0	0	2	1	1	0	0	1	0	2	2	1	10

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

	ROUTE		LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
121	SYD	SFO	33.9S	151.2E	37.5N	122.4W	1	1	0	1	1	0	1	1	0	2	0	2	10
122	IAH	MEX	29.5N	95.3W	19.5N	99.1W	2	2	2	0	2	0	0	2	0	0	0	0	10
123	MIA	CCS	25.8N	80.3W	10.6N	67.0W	0	0	0	10	0	0	0	0	0	0	0	0	10
124	MEL	BKK	37.7S	144.8E	13.9N	100.7E	0	0	0	0	0	0	0	6	0	0	0	4	10
125	MRU	JNB	20.4S	57.7E	26.1S	28.2E	2	4	2	0	0	1	0	0	0	0	0	0	9
126	ITO	ORD	19.7N	155.0W	41.9N	87.9W	0	1	0	0	1	2	4	1	0	0	0	0	9
127	PER	MRU	31.9S	116.0E	20.5S	57.7E	2	4	2	0	0	1	0	0	0	0	0	0	9
128	BAH	BEG	26.3N	50.7E	44.8N	20.3E	1	0	0	0	1	2	0	2	0	1	0	1	8
129	IST	FRA	41.0N	28.8E	50.1N	8.6E	2	0	5	1	0	0	0	0	0	0	0	0	8
130	INFO	FRA	44.8N	20.3E	50.0N	8.6E	0	0	2	1	0	1	2	2	0	0	0	0	8
131	SFO	BOS	37.6N	122.4W	42.4N	71.0W	0	0	0	0	2	0	0	0	1	3	0	2	8
132	SEA	LAX	47.5N	122.3W	34.0N	118.4W	0	0	1	5	1	1	0	0	0	0	0	0	8
133	JFK	EZE	40.6N	73.8W	34.8S	58.5W	0	0	0	0	2	2	0	0	2	0	2	0	8
134	GUM	NRT	13.5N	144.8E	35.8N	140.4E	0	0	0	2	4	0	0	0	0	0	0	2	8
135	BKK	KHI	13.9N	100.6E	25.0N	67.2E	0	1	0	0	0	2	0	2	1	1	0	0	7
136	LAS	LAX	36.1N	115.2W	33.9N	118.4W	1	1	0	1	1	0	0	0	0	1	1	1	7
137	BEG	ORY	44.8N	20.3E	48.8N	2.4E	0	0	2	0	0	0	0	2	0	2	0	0	6
138	HNL	ITO	21.3N	157.9W	19.7N	155.0W	0	0	2	0	0	0	3	0	1	0	0	0	6
139	GUA	SJO	14.6N	90.5W	10.0N	84.2W	2	0	2	0	2	0	0	0	0	0	0	0	6
140	SJO	PTY	10.0N	84.2W	9.1N	79.4W	2	0	2	0	2	0	0	0	0	0	0	0	6
141	ORY	LHR	48.7N	2.4E	51.5N	.5W	1	0	0	1	1	0	0	0	0	1	1	1	6
142	DEL	KHI	28.6N	77.1E	24.9N	67.2E	0	0	2	2	1	1	0	0	0	0	0	0	6
143	HKG	LAX	22.3N	114.2E	34.0N	118.4W	0	0	0	0	0	0	0	1	1	0	1	3	6
144	HNL	LAS	21.3N	157.9W	36.0N	115.2W	1	0	0	1	1	0	0	0	0	1	1	1	6
145	FRA	DEL	50.1N	8.6E	28.6N	77.2E	1	3	2	0	0	0	0	0	0	0	0	0	6
146	MIQ	GIG	10.6N	67.0W	22.8S	43.2W	0	0	0	0	5	0	0	0	0	0	0	0	5
147	BEG	LHR	44.8N	20.3E	51.5N	.5W	1	0	0	1	1	0	0	0	0	1	0	1	5
148	ORY	DAM	48.7N	2.4E	33.5N	36.6E	1	0	0	0	0	0	0	0	0	1	1	1	4
149	DAM	BAH	33.4N	36.5E	26.3N	50.7E	1	0	0	0	0	0	0	0	0	1	1	1	4
150	VIE	FRA	48.1N	16.6E	50.1N	8.6E	0	0	0	0	0	1	0	2	0	0	0	1	4
151	JFK	SNN	40.6N	73.8W	52.7N	8.9W	1	0	1	0	1	0	0	0	0	0	1	0	4
152	PPT	AKL	17.6S	149.6W	37.0S	174.8E	0	0	0	0	0	0	0	4	0	0	0	0	4
153	SFO	OKA	37.6N	122.4W	26.2N	127.8E	0	1	0	1	0	0	0	0	0	0	0	2	4
154	OKA	HKG	26.2N	127.7E	22.3N	114.2E	0	1	0	1	0	0	0	0	0	0	0	2	4
155	BKK	PER	13.9N	100.6E	32.1S	115.9E	0	0	0	0	0	0	1	1	0	0	1	1	4
156	ATH	BAH	37.9N	23.7E	26.2N	50.6E	1	0	0	0	0	0	0	1	0	0	0	2	4
157	ATH	LHR	37.9N	23.7E	51.5N	.5W	0	0	0	0	0	0	0	4	0	0	0	0	4
158	MIQ	GUA	10.6N	67.0W	14.6N	90.5W	0	0	1	0	3	0	0	0	0	0	0	0	4
159	ORD	PHL	42.0N	87.9W	39.9N	75.2W	0	0	0	0	0	0	4	0	0	0	0	0	4
160	VIE	BAH	48.1N	16.6E	26.2N	50.6E	0	0	0	1	1	0	0	0	1	0	0	0	3

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

ROUTE			LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
161	TPE	HKG	25.1N	121.5E	22.3N	114.2E	0	0	0	0	0	2	0	0	0	0	1	0	3
162	BEY	IST	33.8N	35.5E	41.0N	28.8E	0	0	3	0	0	0	0	0	0	0	0	0	3
163	BGR	LAX	44.8N	68.8W	34.0N	118.4W	0	0	0	0	0	1	0	0	0	0	1	1	3
164	MEL	CHC	37.7S	144.8E	43.5S	172.5E	0	0	0	0	0	0	0	0	0	0	1	2	3
165	BEG	VIE	44.8N	20.3E	48.1N	16.6E	0	0	0	0	0	1	0	2	0	0	0	0	3
166	SYD	BKK	33.9S	151.2E	14.0N	100.6E	0	0	0	0	0	0	0	2	0	1	0	0	3
167	BDA	BOS	32.4N	64.6W	42.4N	71.0W	0	0	0	0	3	0	0	0	0	0	0	0	3
168	GUM	HKG	13.5N	144.8E	22.3N	114.2E	0	0	0	0	2	0	0	0	0	0	0	1	3
169	DRW	SIN	12.4S	130.9E	1.4N	103.9E	0	2	0	0	0	0	0	1	0	0	0	0	3
170	ORD	BOS	42.0N	87.9W	42.4N	71.0W	0	0	0	0	0	0	0	0	1	2	0	0	3
171	CCS	LAX	10.6N	67.0W	33.8N	118.4W	1	0	2	0	0	0	0	0	0	0	0	0	3
172	SYD	SYD	33.9S	151.2E	33.9S	151.2E	0	0	1	0	0	0	0	0	0	0	2	0	3
173	PIK	LHR	55.5N	4.6W	51.5N	4.4W	1	0	0	1	0	0	0	0	0	0	1	0	3
174	KHI	FRA	24.9N	67.2E	50.1N	8.5E	0	0	0	1	1	1	0	0	0	0	0	0	3
175	AMS	VIE	52.3N	4.8E	48.1N	16.6E	0	0	0	1	1	0	0	0	1	0	0	0	3
176	BOM	FRA	19.1N	72.9E	50.1N	8.6E	0	0	0	0	1	0	0	0	0	0	1	0	2
177	SYD	KUL	33.9S	151.2E	3.1N	101.5E	0	0	0	0	0	0	0	0	0	0	0	2	2
178	BAH	FCO	26.3N	50.6E	41.8N	12.2E	0	0	0	0	0	0	0	0	0	2	0	0	2
179	ORD	STL	42.0N	87.9W	38.8N	90.4W	0	0	2	0	0	0	0	0	0	0	0	0	2
180	STL	HNL	38.8N	90.4W	21.4N	157.9W	0	0	2	0	0	0	0	0	0	0	0	0	2
181	ORD	ACA	42.0N	87.9W	16.8N	99.8W	0	0	2	0	0	0	0	0	0	0	0	0	2
182	SEA	PIK	47.4N	122.3W	55.6N	4.7W	1	0	0	1	0	0	0	0	0	0	0	0	2
183	FCO	FRA	41.8N	12.3E	50.1N	8.6E	0	0	0	0	0	0	0	0	0	2	0	0	2
184	KUL	MEL	3.1N	101.6E	37.8S	144.9E	0	0	0	0	0	0	0	0	0	0	0	2	2
185	ORD	BDL	42.0N	87.9W	41.9N	72.7W	0	0	0	2	0	0	0	0	0	0	0	0	2
186	JFK	ATH	40.6N	73.8W	37.8N	23.6E	0	0	0	0	1	0	0	0	0	0	1	0	2
187	JFK	IND	40.7N	73.8W	39.7N	86.3W	0	0	0	2	0	0	0	0	0	0	0	0	2
188	DTW	LHR	42.2N	83.4W	51.5N	5.5W	0	0	0	0	2	0	0	0	0	0	0	0	2
189	AKL	BNE	37.0S	174.8E	27.4S	153.1E	0	0	0	0	0	0	0	0	0	0	0	2	2
190	HNL	HNL	21.3N	167.9W	21.3N	167.9W	0	0	0	0	0	0	0	0	0	0	2	0	2
191	ATH	BRU	37.9N	23.7E	50.9N	4.5E	0	0	0	0	1	0	0	0	0	1	0	0	2
192	BRU	JFK	50.9N	4.5E	40.6N	73.8W	0	0	0	0	1	0	0	0	0	1	0	0	2
193	MEL	MEL	37.7S	144.8E	37.7S	144.8E	0	0	0	0	0	0	0	0	0	0	2	0	2
194	GIG	EZE	22.8S	43.3W	34.8S	58.5W	0	0	0	0	0	0	0	2	0	0	0	0	2
195	JFK	DEL	40.6N	73.8W	28.6N	77.4E	0	0	0	0	1	0	0	0	0	1	0	0	2
196	LAX	OMH	34.0N	118.4W	41.3N	95.9W	0	0	0	0	0	0	0	0	0	0	0	2	2
197	MIQ	MIA	10.6N	67.0W	25.8N	80.3W	0	0	0	0	2	0	0	0	0	0	0	0	2
198	BAH	ORY	26.3N	50.7E	48.7N	2.3E	0	0	0	1	1	0	0	0	0	0	0	0	2
199	SYD	HND	33.9S	151.2E	35.4N	139.8E	0	2	0	0	0	0	0	0	0	0	0	0	2
200	IST	BOM	41.0N	28.8E	19.1N	72.9E	1	1	0	0	0	0	0	0	0	0	0	0	2

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

	ROUTE		LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
201	SYD	BNE	33.9S	151.2E	27.4S	153.1E	0	2	0	0	0	0	0	0	0	0	0	0	2
202	JFK	CUN	40.6N	73.8W	21.0N	86.9W	0	0	2	0	0	0	0	0	0	0	0	0	2
203	CCS	SJU	10.6N	67.0W	18.5N	66.0W	0	0	0	2	0	0	0	0	0	0	0	0	2
204	BNE	DRW	27.4S	153.1E	12.4S	130.9E	0	2	0	0	0	0	0	0	0	0	0	0	2
205	KHI	BEY	24.9N	67.2E	33.8N	35.5E	0	0	2	0	0	0	0	0	0	0	0	0	2
206	JFK	CTS	40.6N	73.8W	42.8N	141.7E	0	1	0	0	0	0	0	0	0	0	0	0	1
207	CTS	HND	42.8N	141.7E	35.5N	139.8E	0	1	0	0	0	0	0	0	0	0	0	0	1
208	HND	ORD	35.5N	139.8E	42.1N	87.8W	0	0	0	0	1	0	0	0	0	0	0	0	1
209	AKL	AKL	37.0S	174.8E	37.0S	174.8E	0	0	0	0	1	0	0	0	0	0	0	0	1
210	IST	KHI	41.0N	28.8E	24.9N	67.2E	0	0	0	1	0	0	0	0	0	0	0	0	1
211	PER	SIN	31.9S	116.0E	1.4N	103.9E	0	0	0	0	0	1	0	0	0	0	0	0	1
212	SIN	MRU	1.4N	103.9E	20.4S	57.7E	0	0	0	0	0	1	0	0	0	0	0	0	1
213	MEL	DEL	37.7S	144.9E	28.6N	77.1E	0	0	0	0	0	1	0	0	0	0	0	0	1
214	JFK	MUC	40.6N	73.8W	48.1N	11.6E	0	0	0	0	0	0	0	0	0	1	0	0	1
215	MUC	ATH	48.1N	11.7E	37.9N	23.8E	0	0	0	0	0	0	0	0	0	1	0	0	1
216	BOM	AMS	19.1N	72.9E	52.3N	4.8E	0	0	0	0	0	1	0	0	0	0	0	0	1
217	SFO	FAI	37.4N	122.0W	64.8N	147.9W	0	0	0	0	0	0	0	0	0	1	0	0	1
218	HNL	NOU	21.3N	157.9W	21.8S	166.3E	1	0	0	0	0	0	0	0	0	0	0	0	1
219	FAI	FAI	64.8N	147.9W	64.8N	147.9W	0	0	0	0	0	0	0	0	0	1	0	0	1
220	JFK	CGN	40.6N	73.8W	50.9N	7.3E	0	0	0	0	0	0	0	0	0	0	1	0	1
221	SFO	SFO	37.6N	122.3W	37.6N	122.4W	0	0	1	0	0	0	0	0	0	0	0	0	1
222	LAX	DTW	34.0N	118.4W	42.2N	83.4W	0	0	0	0	0	0	0	0	1	0	0	0	1
223	DTW	PIT	42.2N	83.4W	40.3N	80.3W	0	0	0	0	0	0	0	0	1	0	0	0	1
224	FAI	HNL	64.8N	147.9W	21.3N	157.9W	0	0	0	0	0	0	0	0	0	1	0	0	1
225	HNL	DTW	21.3N	157.9W	42.2N	83.4W	0	0	0	1	0	0	0	0	0	0	0	0	1
226	LHR	CPT	51.5N	4W	33.9S	18.7E	0	0	0	0	0	0	0	0	0	1	0	0	1
227	SNN	FRA	52.7N	8.9W	50.1N	8.6E	0	0	0	0	1	0	0	0	0	0	0	0	1
228	CPT	AKL	34.0S	18.6E	36.9S	174.9E	0	0	0	0	0	0	0	0	0	1	0	0	1
229	JFK	JFK	40.7N	73.8W	40.6N	73.8W	0	0	0	1	0	0	0	0	0	0	0	0	1
230	PPG	MEL	14.3S	170.7W	37.7S	144.8E	0	0	0	0	0	0	0	0	0	0	1	0	1
231	LHR	DUB	51.5N	5W	53.4N	6.3W	0	0	0	0	1	0	0	0	0	0	0	0	1
232	DUB	BOS	53.4N	6.3W	42.3N	71.1W	0	0	0	0	1	0	0	0	0	0	0	0	1
233	JFK	STR	40.6N	73.8W	48.6N	9.2E	0	0	0	0	1	0	0	0	0	0	0	0	1
234	FCO	SNN	41.8N	12.2E	52.7N	8.9W	1	0	0	0	0	0	0	0	0	0	0	0	1
235	PHL	LHR	39.9N	75.1W	51.5N	5W	0	0	0	0	0	0	0	0	1	0	0	0	1
236	JFK	FAI	40.7N	73.8W	64.8N	147.9W	0	0	0	0	0	0	0	0	0	0	1	0	1
237	FAI	HND	64.8N	147.9W	35.5N	139.6E	0	0	0	0	0	0	0	0	0	0	1	0	1
238	JFK	SEA	40.6N	73.8W	47.5N	122.4W	0	0	0	0	0	0	0	1	0	0	0	0	1
239	ATH	PIK	37.9N	23.7E	55.5N	4.6W	0	0	0	0	0	1	0	0	0	0	0	0	1
240	PIK	BGR	55.5N	4.6W	44.8N	68.8W	0	0	0	0	0	1	0	0	0	0	0	0	1

Table 2 (Cont.)

## ROUTE-FLIGHT SUMMARY (CONT.)

ROUTE	LAT	LONG	LAT	LONG	J	F	M	A	M	J	J	A	S	O	N	D	TOT
241 SEA HND	47.4N	122.3W	35.5N	139.6E	0	0	0	0	0	0	0	1	0	0	0	0	1
242 AMS ATH	52.3N	4.8E	37.9N	23.8E	1	0	0	0	0	0	0	0	0	0	0	0	1
243 FCO LHR	41.8N	12.3E	51.5N	5W	0	0	0	0	0	0	0	0	1	0	0	0	1
244 HND IAD	35.5N	139.8E	38.8N	77.4W	0	0	0	0	0	0	0	0	0	0	0	1	1
245 LAS DEN	36.1N	115.1W	39.8N	104.9W	1	0	0	0	0	0	0	0	0	0	0	0	1
246 YVR HND	49.2N	123.2W	35.5N	139.8E	0	0	0	0	0	0	0	0	0	1	0	0	1
247 SFO TPE	37.6N	122.4W	25.1N	121.5E	0	0	0	0	0	0	0	0	0	0	1	0	1
248 SFO GUM	37.6N	122.4W	13.5N	144.9E	0	0	0	0	0	0	0	0	0	0	0	1	1
249 CHC CHC	43.5S	172.5E	43.5S	172.4E	0	0	0	0	0	0	0	0	0	0	1	0	1
250 CHC PPG	43.5S	172.4E	14.3S	170.8W	0	0	0	0	0	0	0	0	0	0	1	0	1
251 ATH DEL	37.9N	23.7E	28.6N	77.1E	0	0	0	0	0	0	0	1	0	0	0	0	1
252 IAH SFO	30.0N	95.4W	37.6N	122.4W	0	0	0	0	0	0	0	0	0	1	0	0	1
253 JFK ANC	40.7N	73.8W	61.2N	150.0W	0	0	0	0	0	0	0	0	1	0	0	0	1
254 ATH BGR	37.9N	23.7E	44.8N	68.8W	0	0	0	0	0	0	0	0	0	0	1	0	1
255 LAX PIK	34.0N	118.4W	55.4N	4.6W	0	0	0	0	0	0	0	0	0	0	1	0	1
256 MUC SNN	48.1N	11.7E	52.7N	8.9W	0	0	0	0	0	0	0	0	0	0	1	0	1
257 LHR LPA	51.4N	6W	27.9N	15.4W	0	0	0	0	0	0	0	0	0	0	0	1	1
258 LPA BGR	27.9N	15.4W	44.9N	68.8W	0	0	0	0	0	0	0	0	0	0	0	1	1
259 ANC HND	61.2N	150.0W	35.6N	139.8E	0	0	0	0	0	0	0	0	1	0	0	0	1
260 DEL IST	28.6N	77.1E	40.9N	28.8E	1	0	0	0	0	0	0	0	0	0	0	0	1
261 BAH SYD	26.3N	50.6E	34.0S	151.2E	0	0	0	0	0	0	0	0	0	0	1	0	1
262 FCO YQX	41.8N	12.2E	49.0N	54.5W	1	0	0	0	0	0	0	0	0	0	0	0	1
263 YQX JFK	49.0N	54.6W	40.6N	73.7W	1	0	0	0	0	0	0	0	0	0	0	0	1
264 ATH ATH	37.9N	23.7E	37.9N	23.7E	0	0	0	0	0	0	0	0	0	0	0	1	1
265 ATH VIE	37.9N	23.7E	48.1N	16.6E	0	0	0	0	0	0	0	0	0	0	0	1	1
266 MIA CUR	25.8N	80.3W	12.3N	68.9W	0	0	0	1	0	0	0	0	0	0	0	0	1
267 FRA ATH	50.1N	8.6E	37.9N	23.7E	0	0	0	0	0	0	0	0	0	0	0	1	1
268 PTY MIQ	9.1N	79.4W	10.6N	67.0W	0	0	1	0	0	0	0	0	0	0	0	0	1
269 PHL NCE	39.9N	75.2W	43.6N	7.4E	0	0	0	1	0	0	0	0	0	0	0	0	1
270 NCE JFK	43.6N	7.4E	40.6N	73.8W	0	0	0	1	0	0	0	0	0	0	0	0	1
271 BOM BKK	19.1N	72.9E	13.7N	100.6E	0	0	0	0	1	0	0	0	0	0	0	0	1
272 JFK LAS	40.6N	73.8W	36.1N	115.2W	0	1	0	0	0	0	0	0	0	0	0	0	1
273 BEY THR	33.8N	35.5E	35.7N	51.3E	0	0	1	0	0	0	0	0	0	0	0	0	1

## APPENDIX A

### The Computation of Statistically Independent Observations

The distance between independent observations is twice the integral space scale (ref. 8). That is,

$$d = 2 I$$

where  $I = \int R(L) dL$

and  $R(L)$  is the autocorrelation function at lag  $L$ . To estimate  $I$ , and hence  $d$ , several hundred selected flight segments were analyzed to determine  $R(L)$ . Only segments with the following properties were chosen: Constant flight level, no moderate or heavy turbulence, no tropopause crossing, at least 1200 km long, and either an east-west or a north-south flight path. Along each east-west segment the latitude does not change by over four degrees, and along each north-south segment the aircraft heading is always within 30 degrees of north or south. For each segment, temperatures were interpolated to 75 km intervals with a cubic spline method, and then  $R(L)$  was computed for  $L=75, 150, \dots, 1200$  km. The resulting  $R$ 's were averaged and then fit with the model  $R(L) = \exp(-\nu L)$ , using  $R(1)$  and  $R(3)$ . For the east-west segments the averages were made for two separate groups, first using all flights in each group and next using only flights in the Northern Hemisphere north of  $25^{\circ}\text{N}$  and during winter (October through April). The exponential model fits fairly well for small lags as shown in Figure A-1, and the resulting estimates of  $d$  and  $I$  are fairly consistent among groups as shown in Table A-1.



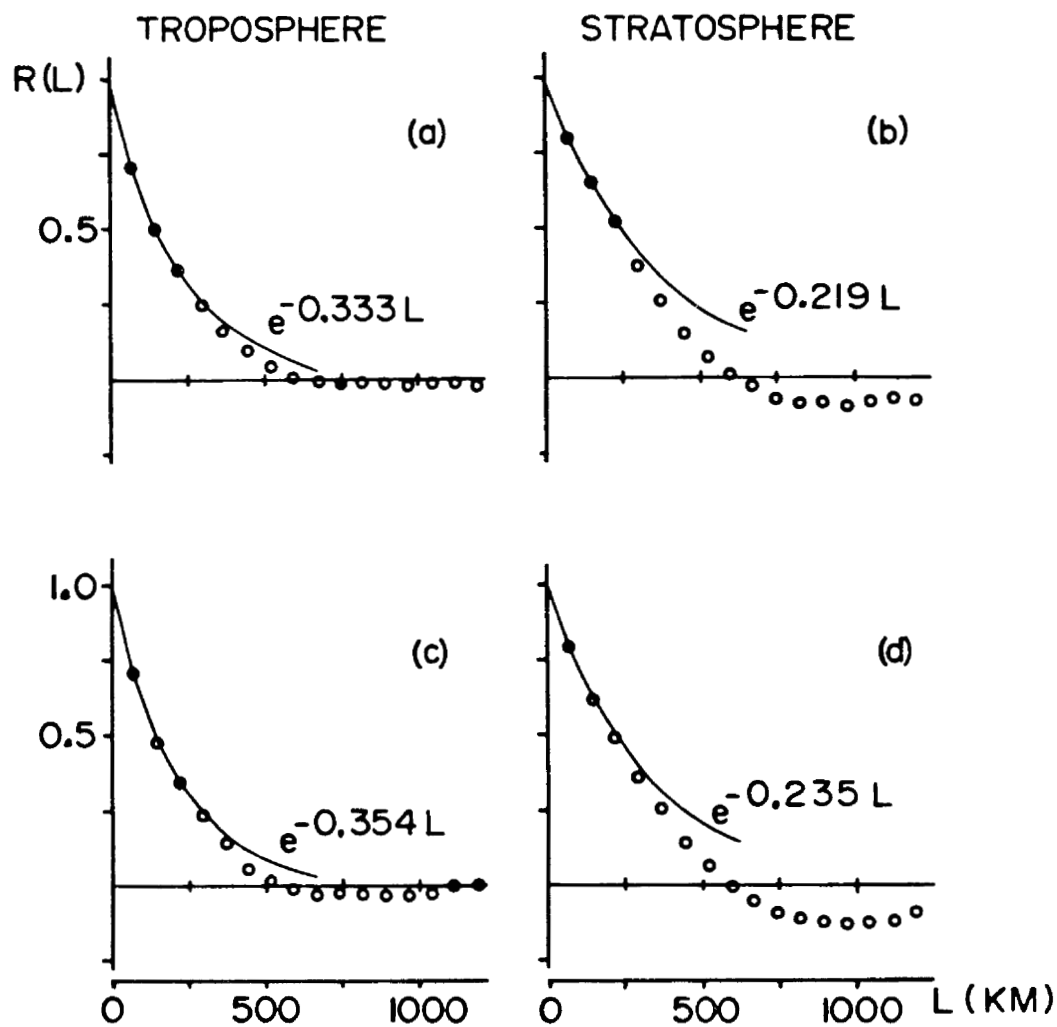


Figure A-1. Comparisons of east-west autocorrelation function,  $R(L)$ , for temperature in the troposphere (a, c) and stratosphere (b, d) for the different groups of flights listed in Table A1, and the best-fit exponential decay model.

Table A-1. Integral space scales (I) and distance between statistically independent temperature observations (d) for two groups of tropospheric and stratospheric flights.

		TROPOSPHERE			STRATOSPHERE		
		<u>Number of Flights</u>	<u>I(km)</u>	<u>d(km)</u>	<u>Number of Flights</u>	<u>I(km)</u>	<u>d(km)</u>
A. East-West Flight Segments							
Group 1		403	225	450	239	343	686
Group 2		290	212	424	314	319	638
Average			218	437		331	662
Group 1 (N.H. Winter)		162	224	448	188	347	694
Group 2 (N.H. Winter)		134	234	468	261	309	618
Average			229	458		328	656
B. North-South Flight Segments							
All		70	252	504	8	148	296

## APPENDIX B

### Flight Static Air Temperature Summaries

The route, date, number of observations and flight duration (at or above FL270) are provided in the first part of the summary. The coldest static (ambient) temperature observed, its associated flight level, latitude and longitude and time into the flight are shown in the next section followed by the mean flight level, mean temperature and the temperature standard deviation of all data above FL270. The last section of the tables provides a breakdown of the temperature, flight level, standard deviation and duration for each flight segment. A flight segment is defined as any segment of the flight in excess of one hour during which the flight level changes by less than  $\pm 500$  feet.

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					--- COLDEST OBSERVATION ---					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
ACA-ORD	3/27/79	36	3:02		-61	FL370	2:07	33.7N	92.9W	FL366	-54.8	6.3	FL369	-56.0	3.6	2:52				
AKL-HNL	12/24/77	27	2:09		-52	FL350	0:50	34.3S	166.0E	FL341	-47.2	5.0	FL350	-49.8	2.0	1:35				
AKL-HNL	5/10/77	79	6:40		-51	FL371	6:25	17.5N	159.1W	FL345	-43.9	4.9	FL331	-39.7	2.3	3:00	FL370	-49.1	.9	2:44
AKL-HNL	7/26/77	81	6:59		-50	FL371	1:54	19.7S	174.1W	FL359	-46.7	3.4	FL330	-41.1	1.3	1:25	FL370	-48.7	.7	4:59
AKL-HNL	8/31/76	86	7:09		-45	FL369	2:45	14.2S	170.7W	FL358	-41.3	3.5	FL348	-38.4	.6	1:16	FL368	-43.4	.6	4:34
AKL-LAX	2/17/79	138	11:06		-69	FL430	9:31	30.4N	135.7W	FL390	-57.7	7.6	FL350	-48.3	.6	1:29	FL370	-53.4	1.0	1:06
													FL390	-56.6	.6	2:04	FL409	-64.4	.9	3:21
													FL430	-59.7	2.8	1:34				
AKL-LAX	2/19/79	130	11:02		-67	FL397	10:57	33.5N	120.6W	FL375	-53.9	6.8	FL350	-47.0	2.5	2:28	FL369	-50.7	.7	3:15
AKL-LAX	4/25/79	120	10:24		-57	FL390	6:54	10.4N	146.8W	FL360	-49.6	3.2	FL390	-57.6	1.1	2:19	FL410	-64.3	.7	1:57
													FL330	-49.1	1.8	1:05	FL350	-47.8	3.1	1:10
													FL370	-49.5	.9	3:04	FL390	-55.9	.6	1:10
AKL-LAX	5/22/78	133	10:59		-66	FL412	9:44	26.2N	129.2W	FL391	-57.5	4.3	FL349	-47.3	1.3	2:24				
AKL-LAX	5/24/78	97	8:27		-63	FL411	6:39	22.4N	133.9W	FL386	-54.8	5.3	FL369	-53.5	1.8	3:32	FL390	-55.2	.4	2:05
AKL-LAX	6/10/78	134	11:18		-61	FL391	9:13	22.2N	134.2W	FL372	-52.9	5.0	FL411	-61.9	1.4	4:50				
													FL370	-50.7	1.0	4:59	FL411	-61.3	1.7	3:15
													FL330	-52.0	2.4	1:09	FL350	-46.6	2.5	1:30
													FL373	-50.4	1.1	1:15	FL374	-49.8	1.4	1:48
													FL391	-57.7	2.0	4:49				
AKL-LAX	6/28/78	125	10:49		-61	FL416	9:34	25.8N	129.5W	FL377	-52.0	6.5	FL330	-43.0	3.2	1:54	FL350	-45.5	.5	1:31
													FL370	-50.5	.5	1:04	FL395	-56.7	.7	1:25
													FL402	-58.8	.7	1:05				
AKL-LAX	7/ 3/78	130	10:44		-61	FL411	8:24	20.1N	136.8W	FL378	-54.1	4.6	FL349	-52.0	4.0	2:19	FL370	-50.3	.7	2:55
AKL-LAX	7/17/78	137	11:19		-60	FL411	7:39	13.5N	143.3W	FL383	-53.9	4.3	FL390	-54.9	.6	2:24	FL410	-60.7	.5	2:19
													FL350	-49.0	1.5	1:49	FL369	-51.3	.7	3:15
AKL-LAX	7/29/78	133	11:12		-60	FL411	8:47	19.9N	136.8W	FL379	-52.2	4.9	FL390	-54.7	.6	1:55	FL411	-59.0	.7	3:39
													FL351	-45.8	1.1	2:19	FL371	-50.0	.4	2:30
AKL-LAX	10/ 2/78	132	11:02		-62	FL411	8:47	21.2N	135.5W	FL379	-52.1	5.8	FL390	-54.7	.9	2:45	FL411	-58.5	1.1	2:34
													FL350	-44.8	.5	2:02	FL370	-48.4	.5	3:15
AKL-LAX	10/18/78	127	10:55		-63	FL411	7:09	12.4N	144.8W	FL381	-53.3	6.2	FL390	-55.5	.7	2:25	FL410	-59.7	1.7	2:39
													FL350	-44.7	2.3	2:00	FL371	-51.1	.6	2:45
AKL-LAX	10/23/78	133	11:24		-62	FL411	6:24	6.9N	150.2W	FL387	-56.0	4.2	FL411	-59.4	3.5	4:00				
AKL-LAX	12/26/77	126	10:37		-61	FL410	6:57	10.6N	146.6W	FL384	-51.3	5.9	FL350	-53.0	1.7	1:45	FL369	-51.1	.5	2:45
													FL390	-56.5	.6	1:30	FL411	-59.9	2.2	4:59
AKL-LAX	12/28/77	126	10:24		-65	FL410	8:25	21.0N	135.3W	FL378	-51.5	7.4	FL330	-41.5	3.6	1:15	FL369	-47.7	.9	2:30
													FL390	-54.6	.6	2:17	FL410	-55.3	4.1	4:00
AKL-LAX	12/30/77	125	10:58		-61	FL410	4:58	3.1S	159.6W	FL390	-52.6	5.9	FL350	-41.8	.7	1:40	FL369	-48.1	.7	3:30
AKL-LAX	12/30/78	128	11:03		-59	FL410	8:28	16.3N	131.6W	FL381	-52.2	5.5	FL390	-55.0	1.9	2:25	FL410	-61.7	3.1	2:03
													FL369	-47.3	1.2	4:38	FL409	-57.9	2.0	5:54
													FL349	-44.1	1.4	2:09	FL370	-50.4	.6	1:55
													FL390	-55.0	1.2	3:58	FL409	-57.2	1.9	2:30
AKL-MEL	1/10/78	32	2:44		-57	FL370	2:34	37.6S	149.1E	FL362	-48.2	7.3	FL370	-51.3	4.2	2:04				
AKL-MEL	1/31/78	29	2:27		-48	FL350	1:20	38.0S	157.4E	FL349	-44.3	2.1	FL350	-44.5	1.8	2:16				
AKL-MEL	2/11/78	35	2:48		-49	FL351	2:12	37.6S	152.1E	FL347	-45.0	3.7	FL350	-45.7	2.4	2:37				
AKL-MEL	2/14/78	31	2:34		-54	FL351	2:09	37.5S	151.2E	FL347	-48.5	4.3	FL350	-49.2	3.2	2:24				
AKL-MEL	2/21/78	30	2:34		-50	FL351	0:25	37.7S	167.7E	FL348	-48.0	2.5	FL350	-48.6	.9	2:24				
AKL-MEL	3/ 4/78	34	2:42		-55	FL350	1:26	38.0S	159.5E	FL338	-48.6	2.9	FL349	-48.1	2.4	1:17	FL330	-50.3	1.3	1:04
AKL-MEL	12/24/77	34	2:44		-55	FL350	0:15	37.5S	170.6E	FL347	-53.0	2.6	FL350	-53.4	.9	2:34				
AKL-PPT	8/15/77	46	3:38		-57	FL391	3:28	18.8S	152.5W	FL381	-52.2	4.3	FL391	-54.1	1.2	2:26				
AKL-PPT	8/22/77	45	3:44		-56	FL370	2:05	27.6S	164.2W	FL366	-49.3	4.3	FL370	-50.1	3.2	3:24				
AKL-SFO	2/ 4/77	127	10:42		-64	FL368	10:42	36.5N	124.0W	FL377	-50.6	4.3	FL369	-48.4	.8	6:47	FL409	-56.6	1.6	2:55
AKL-SFO	4/ 1/77	126	10:49		-62	FL410	6:19	5.8N	150.5W	FL384	-54.1	5.5	FL349	-47.7	1.1	1:04	FL369	-50.6	.7	4:04
													FL409	-59.3	2.3	5:04				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
AKL-SFO	5/ 6/77	126	10:34		-69	FL410	9:04	29.9N	137.0W	FL383	-54.9	5.6	FL371	-50.7	1.3	3:30	FL391	-56.5	.8	2:09		
AKL-SFO	7/ 1/77	123	11:07		-63	FL420	8:38	24.2N	143.0W	FL388	-54.5	5.6	FL410	-59.7	7.1	3:09						
													FL350	-46.2	1.1	1:10	FL370	-50.6	.5	1:34		
													FL390	-55.7	1.6	3:29	FL410	-61.4	.5	1:05		
													FL419	-59.0	3.0	2:33						
AKL-SFO	8/12/77	121	11:07		-57	FL390	5:48	7.9N	162.4W	FL374	-51.7	4.1	FL350	-46.3	3.9	1:51	FL370	-50.9	.5	2:56		
AKL-SFO	9/30/77	116	11:19		-63	FL413	8:45	19.7N	139.3W	FL393	-55.6	5.2	FL389	-54.4	2.3	5:29						
AKL-SFO	10/14/77	115	11:07		-62	FL410	8:15	18.3N	140.4W	FL382	-52.9	5.5	FL370	-49.9	1.5	3:39	FL413	-59.9	2.4	4:39		
													FL349	-44.2	2.4	1:09	FL370	-49.6	.6	3:14		
													FL390	-55.0	.6	2:24	FL409	-59.2	1.3	3:36		
AKL-SFO	10/30/77	650	11:01		-61	FL410	7:03	11.4N	145.8W	FL394	-55.5	3.7	FL369	-51.9	3.5	2:50	FL390	-54.7	.5	1:40		
													FL410	-57.7	1.9	6:06						
AKL-SFO	12/17/76	128	10:47		-60	FL410	6:42	9.5N	147.6W	FL384	-51.6	5.2	FL329	-44.4	.7	1:26	FL369	-48.6	.9	2:44		
													FL390	-54.6	.5	1:57	FL410	-57.3	2.3	2:44		
													FL430	-51.3	1.8	1:04						
AKL-SFO	12/24/76	122	11:18		-66	FL410	10:53	34.9N	126.4W	FL385	-54.8	6.8	FL369	-48.9	1.3	5:23	FL409	-62.0	2.1	4:39		
AKL-SFO	12/31/76	132	11:04		-63	FL410	9:04	25.4N	135.2W	FL386	-54.9	5.2	FL350	-50.7	2.5	1:30	FL370	-49.5	.5	3:07		
													FL409	-59.8	1.7	5:11						
AKL-SYD	1/ 1/77	17	2:28		-67	FL430	0:40	36.5S	167.8E	FL416	-60.9	7.5					FL430	-62.9	1.3	2:01		
AKL-SYD	1/ 6/79	29	2:13		-66	FL430	0:15	36.8S	170.6E	FL424	-62.0	3.8	FL430	-62.9	1.3	2:01						
AKL-SYD	1/12/78	25	2:10		-47	FL351	0:50	36.2S	165.4E	FL325	-42.4	3.1										
AKL-SYD	1/13/79	26	2:09		-63	FL430	1:30	35.3S	159.0E	FL424	-59.3	3.2	FL430	-60.0	2.2	1:54						
AKL-SYD	1/17/78	22	1:59		-50	FL351	0:19	36.6S	169.1E	FL339	-45.5	6.4	FL350	-48.2	1.6	1:34						
AKL-SYD	1/20/79	24	2:04		-60	FL430	0:15	36.8S	170.6E	FL421	-56.8	5.8	FL430	-58.7	.8	1:44						
AKL-SYD	1/24/78	23	2:00		-50	FL351	0:25	36.6S	168.2E	FL342	-44.2	4.0	FL350	-45.9	1.5	1:30						
AKL-SYD	2/ 3/77	29	2:12		-63	FL390	0:40	36.4S	167.0E	FL381	-59.1	5.3	FL389	-61.1	1.4	2:00						
AKL-SYD	2/ 5/77	24	2:05		-59	FL390	0:24	36.6S	168.7E	FL384	-56.1	2.4	FL389	-56.9	1.3	1:45						
AKL-SYD	2/ 6/77	26	1:56		-44	FL310	0:05	36.8S	171.0E	FL308	-41.3	2.1	FL309	-41.7	1.6	1:46						
AKL-SYD	2/16/78	12	1:54		-52	FL350	1:05	35.9S	162.5E	FL343	-47.8	3.6	FL349	-48.7	1.6	1:44						
AKL-SYD	2/16/79	29	2:30		-62	FL390	0:03	36.9S	172.6E	FL386	-56.0	5.2	FL389	-56.8	4.3	2:20						
AKL-SYD	2/18/79	28	2:15		-57	FL431	2:05	34.3S	154.3E	FL425	-55.0	2.6	FL430	-55.6	.8	2:00						
AKL-SYD	2/23/78	25	2:00		-53	FL351	0:50	36.1S	164.6E	FL348	-50.6	3.8	FL350	-51.6	1.1	1:49						
AKL-SYD	2/28/78	27	2:09		-49	FL350	0:09	36.8S	171.1E	FL346	-46.7	2.2	FL350	-47.2	1.1	1:54						
AKL-SYD	3/ 3/78	14	1:09		-45	FL311	0:19	35.6S	160.7E	FL310	-44.3	1.0	FL310	-44.3	1.0	1:09						
AKL-SYD	3/31/77	27	2:24		-58	FL390	0:24	36.7S	169.8E	FL392	-56.7	1.6	FL389	-57.3	.9	1:35						
AKL-SYD	4/ 2/77	29	2:19		-61	FL430	2:09	34.4S	154.5E	FL404	-58.8	2.9										
AKL-SYD	4/10/78	26	2:09		-58	FL383	0:09	36.8S	170.8E	FL378	-49.6	5.6	FL389	-50.9	2.8	1:49						
AKL-SYD	4/14/79	29	2:35		-62	FL430	2:20	34.4S	154.6E	FL422	-58.8	2.9	FL429	-59.5	1.4	2:15						
AKL-SYD	4/15/77	26	2:04		-56	FL350	1:30	34.9S	156.9E	FL349	-52.7	2.1	FL349	-53.0	1.6	2:00						
AKL-SYD	4/24/79	30	2:24		-61	FL410	0:59	36.2S	164.8E	FL405	-58.2	2.6	FL410	-58.7	1.9	2:09						
AKL-SYD	5/ 2/77	27	2:09		-48	FL279	0:00	36.9S	172.8E	FL310	-43.7	1.8	FL310	-43.6	1.6	2:05						
AKL-SYD	5/ 3/79	26	2:15		-67	FL410	1:45	34.9S	157.2E	FL394	-62.8	5.0	FL390	-63.0	.4	1:10						
AKL-SYD	5/ 5/77	30	2:24		-64	FL390	0:45	36.4S	166.8E	FL387	-61.8	2.7	FL390	-62.4	1.5	2:15						
AKL-SYD	5/10/79	29	2:16		-55	FL336	0:00	36.9S	173.2E	FL384	-52.2	1.8	FL389	-52.2	1.6	2:00						
AKL-SYD	5/18/77	25	2:09		-53	FL350	0:20	36.7S	169.3E	FL349	-50.9	1.5	FL350	-51.2	.5	2:04						
AKL-SYD	5/21/77	14	2:19		-53	FL391	0:00	36.8S	172.7E	FL382	-49.7	2.6	FL390	-50.2	1.9	2:15						
AKL-SYD	5/21/78	29	2:15		-59	FL387	0:06	36.9S	173.1E	FL414	-53.9	4.2	FL430	-55.0	1.1	1:54						
AKL-SYD	6/ 1/78	30	2:19		-67	FL390	0:34	36.6S	168.2E	FL381	-62.7	6.7	FL390	-64.7	2.4	2:11						
AKL-SYD	6/ 3/78	24	2:10		-65	FL390	0:05	36.9S	172.5E	FL388	-55.0	6.2	FL390	-55.1	6.3	2:05						
AKL-SYD	6/ 8/77	26	2:09		-58	FL391	1:15	35.6S	161.1E	FL385	-54.9	2.1	FL390	-55.3	1.9	1:45						
AKL-SYD	6/ 9/78	26	2:15		-59	FL410	1:49	34.9S	157.0E	FL395	-52.0	3.9	FL410	-53.5	3.8	1:04						
AKL-SYD	6/14/79	72	2:14		-54	FL391	1:40	35.2S	158.3E	FL389	-52.6	.8	FL390	-52.6	.8	2:04						
AKL-SYD	6/15/77	17	2:09		-61	FL351	0:20	36.7S	169.3E	FL355	-58.1	1.5	FL350	-58.1	1.6	1:49						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
AKL-SYD	6/20/77	26	2:09	-61	FL351	0:24	36.6S	169.0E	FL346	-57.0	4.6	FL350	-58.4	1.5	1:56				
AKL-SYD	6/27/78	28	2:15	-57	FL391	0:54	36.2S	165.3E	FL390	-55.8	1.1	FL391	-55.8	1.1	2:10				
AKL-SYD	6/30/77	32	2:26	-56	FL430	0:35	36.6S	168.9E	FL411	-49.3	3.6	FL429	-48.0	2.7	1:39				
AKL-SYD	7/ 2/77	26	2:15	-57	FL429	2:10	34.3S	154.1E	FL423	-51.3	3.5	FL429	-51.9	3.0	1:55				
AKL-SYD	7/ 2/78	33	2:31	-68	FL391	0:15	36.8S	171.3E	FL399	-61.5	7.2	FL411	-58.2	6.1	1:20				
AKL-SYD	7/16/78	28	2:15	-58	FL347	0:00	37.0S	173.3E	FL423	-54.8	1.7	FL429	-54.8	1.0	2:00				
AKL-SYD	7/18/77	27	2:15	-52	FL349	0:05	36.9S	172.2E	FL359	-44.3	3.0	FL350	-44.3	3.3	1:24				
AKL-SYD	7/22/78	35	2:50	-59	FL430	0:39	36.5S	168.1E	FL425	-56.3	2.4	FL430	-56.8	1.5	2:35				
AKL-SYD	7/25/77	30	2:24	-49	FL391	2:19	34.3S	154.0E	FL376	-46.7	1.0	FL390	-46.6	1.1	1:15				
AKL-SYD	7/28/78	28	2:15	-58	FL430	2:09	34.3S	154.2E	FL422	-50.8	4.3	FL429	-51.0	4.2	1:54				
AKL-SYD	8/ 4/78	29	2:11	-60	FL390	1:16	35.8S	161.8E	FL384	-57.0	2.1	FL390	-57.0	2.2	1:51				
AKL-SYD	8/13/77	22	2:15	-55	FL351	0:04	36.9S	172.5E	FL377	-47.6	3.7	FL390	-45.7	1.8	1:50				
AKL-SYD	8/22/77	27	2:15	-50	FL311	1:00	36.1S	163.9E	FL323	-44.0	2.9	FL310	-46.0	2.3	1:09				
AKL-SYD	8/24/78	25	2:09	-54	FL390	2:05	34.2S	153.5E	FL385	-45.9	4.1	FL390	-46.2	4.1	2:00				
AKL-SYD	9/14/77	28	2:20	-52	FL347	0:05	36.9S	172.3E	FL345	-46.3	2.0	FL350	-46.5	2.0	2:09				
AKL-SYD	9/29/77	20	2:24	-58	FL345	0:00	36.9S	173.4E	FL375	-49.9	3.9	FL389	-50.3	1.3	2:04				
AKL-SYD	10/ 1/77	27	2:20	-57	FL411	1:50	34.9S	156.7E	FL404	-50.0	4.2	FL410	-49.7	4.3	2:05				
AKL-SYD	10/ 1/78	23	2:01	-64	FL430	1:39	34.8S	156.5E	FL411	-57.1	5.3	FL429	-60.4	3.1	1:16				
AKL-SYD	10/ 5/77	27	2:24	-57	FL350	0:20	36.7S	169.9E	FL347	-55.2	2.6	FL350	-55.7	1.0	2:09				
AKL-SYD	10/ 7/78	26	2:05	-57	FL431	1:50	34.6S	153.4E	FL418	-51.3	3.3								
AKL-SYD	10/13/77	25	2:05	-58	FL389	1:15	35.7S	161.1E	FL387	-54.6	3.9	FL389	-55.0	3.7	2:00				
AKL-SYD	10/15/77	28	2:30	-58	FL430	2:00	34.9S	156.9E	FL424	-55.3	1.6	FL430	-55.1	1.7	2:10				
AKL-SYD	10/22/78	27	2:09	-63	FL410	0:09	36.9S	171.8E	FL407	-58.7	2.4	FL410	-58.8	2.0	2:00				
AKL-SYD	10/28/78	25	2:04	-65	FL391	0:54	36.0S	163.5E	FL385	-59.5	4.1	FL390	-60.5	2.2	1:55				
AKL-SYD	10/31/76	26	2:04	-54	FL350	0:20	36.7S	169.3E	FL343	-48.9	2.9	FL350	-49.9	2.2	1:45				
AKL-SYD	11/13/76	26	2:13	-54	FL350	0:50	36.2S	164.7E	FL337	-50.9	3.0	FL350	-52.7	1.8	1:22				
AKL-SYD	11/13/78	25	2:09	-54	FL330	1:15	35.7S	161.6E	FL326	-50.3	3.0	FL330	-51.5	1.4	1:50				
AKL-SYD	11/25/76	28	2:19	-56	FL358	2:19	34.2S	152.8E	FL372	-51.0	2.1								
AKL-SYD	11/25/77	23	2:05	-61	FL398	2:05	34.2S	153.2E	FL439	-55.2	2.6	FL449	-55.5	1.9	1:45				
AKL-SYD	11/28/77	23	1:54	-53	FL350	0:45	36.2S	165.0E	FL340	-48.8	4.5	FL349	-51.5	1.0	1:09				
AKL-SYD	12/ 1/77	27	2:14	-63	FL430	1:29	35.3S	159.2E	FL415	-56.3	6.3	FL429	-58.3	1.9	1:54				
AKL-SYD	12/ 3/77	28	2:25	-62	FL390	0:10	36.8S	171.6E	FL391	-56.4	7.6	FL410	-56.7	1.9	1:30				
AKL-SYD	12/ 7/76	25	2:09	-56	FL350	0:25	36.6S	166.8E	FL347	-53.0	3.6	FL349	-53.7	1.9	1:59				
AKL-SYD	12/ 8/76	24	2:04	-53	FL350	0:24	36.6S	169.0E	FL342	-48.0	3.6	FL349	-49.4	2.0	1:39				
AKL-SYD	12/15/76	28	2:13	-54	FL351	0:09	36.8S	171.0E	FL344	-48.0	4.8	FL350	-49.4	2.3	1:59				
AKL-SYD	12/16/76	28	2:22	-63	FL415	0:05	36.9S	172.2E	FL423	-57.0	3.5	FL429	-57.5	2.3	2:03				
AKL-SYD	12/16/78	27	2:09	-66	FL390	1:54	34.5S	154.8E	FL385	-57.4	3.7	FL390	-58.3	5.1	1:55				
AKL-SYD	12/18/76	28	2:14	-55	FL396	2:14	34.2S	153.4E	FL399	-49.1	2.6	FL410	-50.3	1.8	1:10				
AKL-SYD	12/23/76	25	2:17	-68	FL430	1:00	36.0S	163.5E	FL407	-58.2	10.2	FL430	-62.6	3.3	2:00				
AKL-SYD	12/23/77	28	2:15	-65	FL391	1:30	35.4S	159.7E	FL386	-57.0	5.4	FL390	-57.6	5.0	2:04				
AKL-SYD	12/25/76	28	2:15	-64	FL430	1:54	34.6S	155.6E	FL421	-60.6	5.9	FL429	-62.2	1.0	2:00				
AKL-SYD	12/25/77	28	2:20	-66	FL430	1:15	35.8S	162.1E	FL422	-59.8	4.4	FL430	-60.8	2.6	2:04				
AKL-SYD	12/25/77	26	2:09	-61	FL390	1:15	35.6S	160.8E	FL363	-54.1	7.0								
AKL-SYD	12/27/76	28	2:12	-41	FL310	0:32	36.4S	167.1E	FL309	-39.8	1.9	FL310	-40.1	1.9	2:07				
AKL-SYD	12/27/77	29	2:19	-60	FL430	0:09	36.9S	172.0E	FL424	-55.0	4.3	FL430	-55.7	2.8	2:05				
AKL-SYD	12/29/77	28	2:17	-58	FL430	2:07	34.4S	154.6E	FL420	-52.0	3.3	FL430	-52.4	3.0	2:03				
AKL-SYD	12/29/78	23	2:15	-59	FL390	0:05	36.9S	172.4E	FL386	-56.1	3.6	FL390	-56.9	1.9	2:05				
AKL-SYD	12/30/76	27	2:20	-65	FL430	2:00	34.7S	155.9E	FL425	-58.3	4.9	FL430	-58.6	4.8	2:05				
AKL-SYD	12/31/77	28	2:14	-58	FL430	1:45	35.0S	157.7E	FL425	-56.5	1.1	FL430	-56.7	1.6	2:00				
AMS-ATH	1/20/77	23	2:17	-61	FL331	1:47	43.3N	21.2E	FL317	-56.0	4.3								
AMS-BAH	1/11/77	61	5:03	-63	FL330	0:10	50.3N	8.9E	FL328	-56.5	4.0	FL329	-56.8	3.2	4:47				
AMS-BAH	5/24/77	53	5:01	-59	FL371	3:00	39.1N	36.7E	FL350	-52.8	4.5	FL331	-52.5	1.0	1:45	FL371	-54.9	2.8	2:34
AMS-BAH	8/ 4/77	53	4:40	-47	FL330	0:15	49.6N	9.5E	FL326	-36.5	6.2	FL330	-36.3	6.3	4:25				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
AMS-BAH	10/19/76	59	4:51	-55	FL330	0:54	46.1N	15.7E	FL329	-49.8	2.9	FL330	-49.9	2.8	4:41				
AMS-BAH	11/11/77	59	4:49	-62	FL354	2:54	39.0N	37.8E	FL345	-51.5	4.6	FL329	-48.8	2.2	2:44	FL370	-56.0	2.2	1:45
AMS-BAH	11/17/77	52	4:30	-55	FL302	0:00	51.2N	7.7E	FL329	-48.4	2.6	FL330	-48.6	1.8	4:15				
AMS-BAH	11/24/77	55	4:39	-57	FL371	3:39	34.8N	43.6E	FL328	-51.0	3.2	FL291	-47.4	1.8	1:15	FL330	-52.5	.7	1:19
AMS-BAH	12/21/76	55	4:49	-58	FL330	3:19	38.0N	41.4E	FL329	-54.2	2.7	FL329	-54.4	2.6	4:39				
ANC-HND	9/11/76	81	6:59	-64	FL429	5:29	38.2N	155.6E	FL403	-56.9	4.6	FL389	-53.8	1.4	2:49	FL409	-58.2	.8	2:09
												FL429	-62.4	1.1	1:34				
ATH-BAH	1/21/77	33	2:39	-48	FL285	0:00	36.2N	25.1E	FL290	-45.8	2.2	FL290	-45.8	2.2	2:34				
ATH-BAH	8/27/77	24	2:34	-43	FL371	2:29	27.2N	48.6E	FL341	-36.3	4.7	FL330	-34.6	2.9	1:24				
ATH-BAH	12/21/77	31	2:34	-55	FL330	0:09	36.6N	27.4E	FL352	-48.7	4.0	FL370	-48.9	1.1	1:35				
ATH-BGR	11/ 9/78	99	8:16	-59	FL370	6:46	47.4N	53.6W	FL320	-50.0	4.1	FL309	-48.5	1.7	6:26	FL369	-57.6	.7	1:25
ATH-BKK	7/16/77	91	8:03	-46	FL370	7:38	16.6N	96.9E	FL327	-31.3	7.9	FL290	-22.0	2.1	2:09	FL330	-31.1	.6	4:00
												FL369	-45.0	.7	1:29				
ATH-BKK	7/24/77	97	8:19	-45	FL370	7:15	20.4N	92.1E	FL328	-31.7	7.4	FL290	-24.2	2.9	2:24	FL330	-30.1	1.6	3:24
												FL369	-43.0	1.8	2:09				
ATH-BKK	8/16/77	90	8:04	-44	FL370	7:30	17.6N	95.7E	FL329	-32.9	6.1	FL290	-26.3	2.3	2:04	FL330	-31.5	.9	3:49
												FL370	-43.0	.8	1:39				
ATH-BKK	8/23/76	107	8:58	-46	FL370	6:35	18.4N	80.5E	FL328	-35.8	7.2	FL290	-28.9	3.8	2:45	FL330	-34.8	.7	3:29
												FL369	-45.9	.3	2:15				
ATH-BKK	8/30/76	102	8:37	-48	FL371	7:28	16.5N	89.3E	FL330	-36.4	7.2	FL290	-29.7	2.7	2:20	FL330	-33.9	.9	3:32
												FL370	-47.2	.8	2:19				
ATH-BKK	11/13/77	92	7:42	-50	FL332	3:07	30.7N	57.7E	FL332	-43.9	3.7	FL291	-38.7	.8	1:22	FL331	-44.2	2.5	4:04
												FL370	-47.7	.5	1:49				
ATH-BKK	12/ 8/77	82	7:20	-56	FL330	1:30	34.1N	43.2E	FL345	-48.8	3.8	FL329	-48.4	4.3	4:09	FL370	-50.1	1.2	2:39
ATH-BKK	12/17/77	92	7:37	-56	FL330	1:37	34.0N	44.4E	FL331	-47.9	2.9	FL290	-47.6	2.2	1:22	FL330	-48.1	3.4	4:14
												FL369	-48.3	1.1	1:39				
ATH-BKK	12/27/77	86	7:15	-50	FL331	0:49	34.6N	34.5E	FL335	-44.5	4.4	FL330	-46.2	2.8	4:29	FL330	-37.4	1.2	1:20
ATH-BRU	5/25/78	25	2:04	-59	FL351	1:15	46.3N	14.7E	FL330	-53.2	6.3	FL350	-58.7	.5	1:04				
ATH-BRU	10/30/76	27	2:05	-58	FL388	0:37	43.1N	20.0E	FL365	-47.1	6.6	FL387	-50.4	3.6	1:28				
ATH-DAM	3/17/77	17	1:15	-50	FL330	1:00	35.2N	35.5E	FL323	-46.6	1.5	FL330	-46.7	1.5	1:04				
ATH-DAM	10/ 7/76	8	1:10	-49	FL330	0:04	35.4N	25.8E	FL327	-47.4	1.8								
ATH-DAM	11/12/76	16	1:14	-51	FL330	0:34	35.0N	30.8E	FL324	-49.1	3.6								
ATH-DEL	8/19/76	58	5:00	-33	FL331	2:54	31.5N	55.5E	FL307	-28.7	3.9	FL290	-25.7	1.6	2:40	FL330	-32.9	.3	2:00
ATH-FCO	2/22/77	13	1:04	-55	FL350	0:04	38.2N	21.1E	FL345	-52.8	3.5								
ATH-FCO	5/15/77	14	1:00	-50	FL311	0:54	40.7N	14.3E	FL307	-45.6	2.8								
ATH-FCO	7/24/77	12	1:00	-42	FL310	0:05	38.2N	20.9E	FL309	-41.0	1.1								
ATH-FCO	8/16/77	12	1:00	-47	FL351	0:15	38.4N	19.3E	FL335	-42.9	6.6								
ATH-FCO	12/ 5/76	13	1:00	-49	FL310	0:30	38.6N	17.6E	FL308	-46.9	1.9								
ATH-FCO	12/27/77	11	1:00	-59	FL351	0:45	39.7N	15.3E	FL345	-55.6	3.7								
ATH-LHR	8/23/76	32	2:29	-61	FL390	2:19	51.3N	3.5E	FL365	-52.2	5.9	FL390	-56.3	3.1	1:09				
ATH-LHR	8/30/76	28	2:19	-39	FL280	2:09	50.9N	4.7E	FL280	-34.8	2.2	FL280	-34.8	2.2	2:19				
ATH-PIK	6/18/78	35	3:04	-56	FL351	2:04	51.0N	8.8E	FL348	-50.1	3.8	FL350	-50.7	2.9	2:15				
ATH-THR	2/22/77	33	2:40	-56	FL330	2:35	34.7N	49.4E	FL326	-51.5	4.1	FL330	-52.4	2.3	2:24				
ATH-THR	5/15/77	29	2:19	-44	FL290	1:15	33.6N	38.4E	FL291	-39.9	1.5	FL291	-39.9	1.5	2:19				
ATH-THR	6/10/77	29	2:20	-49	FL326	0:05	35.8N	25.5E	FL329	-44.2	4.0	FL331	-44.4	3.5	2:10				
ATH-THR	8/11/76	31	2:24	-35	FL330	0:09	35.1N	27.2E	FL328	-32.9	2.5	FL330	-33.4	.9	2:20				
ATH-THR	8/15/76	29	2:25	-35	FL290	0:00	36.0N	25.3E	FL326	-33.2	.9	FL330	-33.4	.5	2:05				
ATH-THR	10/26/76	29	2:25	-52	FL331	0:55	35.0N	34.5E	FL323	-48.7	4.4	FL330	-50.4	1.2	2:05				
ATH-THR	11/ 5/76	31	2:33	-52	FL330	0:15	35.1N	27.3E	FL330	-50.2	1.5	FL330	-50.2	1.5	2:29				
ATH-THR	12/ 5/76	36	2:37	-50	FL330	2:28	34.4N	48.5E	FL324	-46.8	4.0	FL330	-48.1	1.1	1:20				
ATH-VIE	12/21/77	15	1:15	-62	FL351	1:15	46.6N	15.7E	FL343	-57.2	3.5	FL350	-58.3	1.7	1:04				
BAH-AMS	1/ 2/78	49	4:14	-48	FL281	1:19	40.0N	33.1E	FL281	-43.9	1.6	FL281	-43.9	1.6	4:14				
BAH-AMS	8/ 4/77	57	4:59	-51	FL350	4:19	48.6N	13.3E	FL292	-30.5	10.1	FL279	-25.5	4.8	3:49				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BAH-AMS	11/7/77	63	5:29		-58	FL351	4:14	45.4N	18.2E	FL334	-51.1	6.6	FL310	-44.2	2.5	2:04	FL351	-56.1	1.0	3:09
BAH-AMS	11/17/77	64	5:44		-57	FL351	2:14	39.0N	37.0E	FL344	-48.5	4.3	FL350	-46.9	2.4	1:04	FL350	-50.1	3.7	3:34
BAH-AMS	11/24/77	66	5:39		-55	FL311	5:09	49.4N	11.8E	FL311	-48.7	2.6	FL310	-48.8	2.5	5:34				
BAH-AMS	12/12/77	54	4:29		-53	FL310	1:24	39.4N	35.1E	FL289	-45.5	4.7	FL310	-52.1	.8	1:04	FL281	-43.7	3.0	2:34
BAH-ATH	12/20/77	41	3:15		-52	FL350	1:30	31.7N	38.8E	FL345	-47.3	3.4	FL350	-48.1	2.4	3:00				
BAH-BEG	1/11/77	47	3:54		-64	FL350	2:54	40.4N	30.5E	FL343	-57.7	6.7	FL350	-60.2	2.4	3:19				
BAH-BEG	5/24/77	41	3:44		-55	FL351	2:09	39.2N	36.0E	FL348	-51.2	5.1	FL350	-52.1	3.2	3:34				
BAH-BEG	6/22/77	18	1:34		-45	FL312	1:30	43.2N	22.4E	FL311	-40.2	3.5	FL311	-40.2	3.5	1:30				
BAH-BEG	8/24/77	42	3:23		-43	FL314	3:22	43.7N	21.6E	FL320	-33.5	4.6	FL310	-32.6	4.6	2:18				
BAH-BEG	10/19/76	44	3:34		-51	FL310	3:14	42.2N	25.8E	FL309	-45.1	2.9	FL309	-45.3	2.3	3:29				
BAH-BEG	12/21/76	45	3:42		-55	FL323	1:12	34.6N	43.7E	FL304	-48.4	3.9	FL280	-46.3	.4	1:30				
BAH-BKK	2/1/77	60	4:59		-46	FL330	0:04	24.6N	54.2E	FL329	-40.2	2.2	FL329	-40.2	2.2	4:54				
BAH-BKK	2/15/77	62	5:24		-50	FL370	2:24	19.6N	74.5E	FL351	-43.8	5.2	FL330	-38.3	1.9	2:09	FL370	-48.5	.6	2:54
BAH-BKK	3/29/77	61	5:04		-49	FL370	4:24	15.4N	93.3E	FL344	-44.9	2.4	FL330	-43.8	1.2	2:54	FL370	-47.5	.8	1:45
BAH-BKK	5/22/77	53	5:05		-46	FL369	4:37	14.8N	95.5E	FL334	-38.8	3.2	FL330	-38.2	1.6	4:11				
BAH-BKK	5/31/77	54	4:45		-37	FL330	4:44	14.0N	99.1E	FL316	-32.2	4.4	FL290	-26.6	1.0	1:30	FL330	-35.4	.7	3:00
BAH-BKK	11/9/76	61	5:03		-34	FL290	0:04	24.6N	54.2E	FL290	-29.1	1.6	FL290	-29.0	1.6	4:58				
BAH-BKK	11/30/76	61	5:00		-38	FL330	3:28	17.1N	85.8E	FL303	-32.7	3.6	FL290	-30.3	1.1	3:23	FL329	-37.7	.5	1:31
BAH-BKK	12/30/76	62	4:56		-48	FL370	3:15	17.6N	85.1E	FL335	-40.2	4.1	FL330	-39.9	1.6	3:00				
BAH-BOM	1/3/79	26	2:04		-63	FL410	0:54	23.2N	61.1E	FL404	-61.2	3.1	FL410	-62.2	1.0	1:50				
BAH-BOM	1/10/79	24	1:55		-63	FL410	1:19	21.6N	65.5E	FL402	-60.5	4.3	FL410	-61.9	.4	1:39				
BAH-BOM	1/17/79	24	2:00		-59	FL381	0:04	25.8N	52.9E	FL405	-56.3	2.2	FL410	-56.5	1.3	1:50				
BAH-BOM	8/28/78	26	2:18		-56	FL411	0:04	23.6N	53.4E	FL406	-54.7	4.4	FL410	-55.9	.3	2:07				
BAH-BOM	9/27/78	29	2:20		-58	FL410	1:20	22.5N	63.3E	FL404	-55.8	5.2	FL410	-57.3	.6	2:05				
BAH-BOM	10/11/78	28	2:15		-61	FL410	0:10	25.6N	53.6E	FL406	-59.0	4.7	FL409	-60.0	.7	2:04				
BAH-BOM	10/13/78	29	2:20		-60	FL410	0:25	25.1N	55.8E	FL404	-58.0	4.6	FL410	-59.3	.5	2:04				
BAH-BOM	11/23/78	25	2:04		-65	FL410	0:40	24.0N	58.7E	FL405	-62.8	4.5	FL410	-64.0	.7	1:49				
BAH-BOM	11/25/78	25	2:05		-64	FL410	0:10	25.6N	53.9E	FL407	-62.4	4.0	FL410	-63.3	.8	1:55				
BAH-BOM	12/1/78	24	2:01		-66	FL410	0:15	25.4N	54.6E	FL403	-61.9	5.5	FL410	-63.5	1.3	1:45				
BAH-BOM	12/8/78	26	2:10		-58	FL370	0:30	24.8N	56.7E	FL366	-55.1	4.3	FL369	-56.3	1.1	2:00				
BAH-BOM	12/20/78	26	2:04		-61	FL410	2:04	19.7N	70.8E	FL399	-54.3	4.2	FL410	-56.2	2.2	1:34				
BAH-BOM	12/22/78	27	2:03		-57	FL410	1:58	20.0N	70.2E	FL404	-53.6	2.9	FL410	-54.3	1.7	1:48				
BAH-FCO	10/13/77	51	4:19		-56	FL350	2:24	35.0N	29.3E	FL337	-50.6	3.3	FL350	-52.1	2.8	2:40				
BAH-FRA	1/17/77	59	4:54		-64	FL350	2:39	38.3N	31.3E	FL334	-54.3	5.5	FL310	-51.4	2.0	1:54	FL350	-56.4	5.9	2:49
BAH-FRA	1/20/77	53	5:14		-62	FL351	3:44	42.6N	24.0E	FL337	-54.9	5.3	FL310	-49.8	.8	1:30	FL350	-57.7	4.1	3:29
BAH-FRA	1/31/77	63	5:19		-62	FL350	4:49	46.3N	16.0E	FL332	-51.9	6.0	FL310	-45.7	.9	2:19	FL350	-57.2	1.8	2:44
BAH-FRA	3/28/77	55	4:49		-61	FL350	2:59	40.9N	28.9E	FL327	-53.3	4.9	FL310	-50.0	2.8	2:45	FL350	-58.1	2.0	1:50
BAH-FRA	5/21/77	51	4:23		-47	FL310	3:58	46.4N	15.7E	FL290	-40.1	3.7	FL281	-37.8	2.7	2:30				
BAH-FRA	5/30/77	55	4:43		-57	FL351	3:58	45.4N	18.3E	FL333	-50.4	4.9	FL311	-45.3	1.1	1:54	FL350	-54.6	1.8	2:29
BAH-FRA	9/30/76	46	4:19		-56	FL350	4:00	47.4N	15.0E	FL347	-50.0	5.1	FL349	-50.8	3.0	4:01				
BAH-FRA	11/8/76	55	4:44		-52	FL310	4:14	46.3N	16.0E	FL297	-43.0	4.7	FL281	-39.5	1.2	2:00	FL310	-46.8	2.9	2:34
BAH-FRA	11/22/76	58	4:57		-55	FL310	4:12	45.3N	18.6E	FL310	-48.3	3.3	FL310	-48.5	2.9	4:52				
BAH-FRA	11/29/76	61	5:20		-57	FL350	3:44	42.6N	24.1E	FL326	-48.1	7.1	FL309	-43.4	4.3	2:54	FL350	-55.0	3.0	2:09
BAH-JFK	1/3/79	149	13:09		-73	FL431	9:44	49.1N	42.1W	FL385	-59.4	6.9	FL350	-55.6	5.8	4:55	FL390	-60.8	2.1	1:54
													FL410	-66.0	3.8	2:19	FL410	-66.8	1.7	1:04
													FL430	-54.7	2.9	1:55				
BAH-JFK	1/10/79	153	13:14		-64	FL350	4:24	45.5N	17.7E	FL380	-52.8	3.8	FL350	-54.5	4.3	5:20	FL390	-53.1	1.8	3:29
BAH-JFK	1/17/79	139	11:38		-68	FL391	7:33	55.1N	27.5W	FL371	-53.7	4.8	FL409	-52.9	1.9	1:34	FL429	-48.9	2.0	1:55
BAH-JFK	1/26/77	140	12:50		-71	FL390	3:34	42.3N	25.7E	FL372	-56.6	8.8	FL350	-52.6	4.1	4:15	FL390	-55.5	5.1	4:24
													FL390	-54.8	2.6	2:04				
													FL279	-39.0	2.5	1:07	FL389	-65.3	4.8	1:25
													FL389	-60.9	6.3	2:51	FL410	-55.9	1.5	1:45
													FL349	-52.1	6.8	2:00				



APPENDIX B  
FLIGHT SUMMARY

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-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BAH-JFK	2/ 9/77	147	12:27		-66	FL390	2:15	39.1N	36.5E	FL392	-53.6	5.0	FL389	-60.3	5.1	1:49	FL390	-56.7	2.0	1:33
BAH-JFK	3/23/77	137	11:43		-66	FL390	4:34	48.0N	14.4E	FL387	-54.1	4.8	FL429	-52.9	1.5	4:24				
BAH-JFK	5/25/77	82	12:13		-61	FL371	5:23	44.1N	6.1E	FL377	-51.8	4.4	FL390	-58.1	4.9	4:58	FL410	-51.4	1.8	4:34
													FL350	-53.6	2.8	4:31	FL410	-52.8	1.8	1:39
BAH-JFK	6/ 7/78	145	12:05		-71	FL430	11:33	43.4N	66.9W	FL383	-56.1	7.7	FL410	-49.6	2.0	2:59				
													FL350	-48.3	5.5	3:39	FL370	-60.1	.9	1:20
													FL390	-59.7	1.9	2:49	FL410	-56.9	4.9	2:10
													FL430	-65.6	2.8	1:21				
BAH-JFK	7/12/77	141	12:09		-62	FL410	10:09	51.5N	56.0W	FL382	-49.3	8.6	FL350	-41.5	4.6	4:15	FL390	-57.0	4.1	2:05
BAH-JFK	8/28/78	140	12:04		-65	FL410	9:00	48.0N	39.2W	FL378	-53.0	8.1	FL410	-53.5	7.1	2:25	FL429	-56.8	1.3	1:15
BAH-JFK	9/27/78	152	12:27		-64	FL390	5:47	42.4N	4.4W	FL370	-54.9	10.5	FL350	-46.3	5.1	4:49	FL390	-59.9	2.0	3:15
													FL410	-57.6	4.5	3:24				
													FL310	-35.1	1.4	2:15	FL350	-51.5	4.2	1:39
													FL370	-60.2	2.9	1:29	FL390	-61.6	1.7	4:20
BAH-JFK	10/11/78	143	11:53		-63	FL392	4:09	41.5N	12.1E	FL384	-54.9	7.3	FL410	-61.6	1.6	2:10				
													FL310	-39.0	1.9	1:24	FL351	-56.0	2.3	2:20
													FL391	-61.3	1.3	1:55	FL411	-55.9	2.5	4:23
													FL431	-60.7	1.0	1:09				
BAH-JFK	10/13/78	139	11:42		-67	FL390	7:54	47.0N	30.2W	FL377	-56.9	5.1	FL350	-53.8	3.2	5:20	FL390	-60.0	4.0	3:51
BAH-JFK	11/23/78	152	12:54		-69	FL409	7:35	50.8N	18.7W	FL384	-58.9	5.2	FL430	-60.7	.9	1:57				
BAH-JFK	11/25/78	143	12:49		-73	FL410	7:34	44.0N	19.0W	FL379	-60.0	8.0	FL349	-55.9	3.2	5:15	FL389	-64.0	2.1	1:45
													FL410	-60.0	3.6	3:03	FL430	-62.2	1.4	2:00
BAH-JFK	12/ 1/78	147	12:44		-68	FL391	5:59	52.7N	4.4E	FL384	-55.5	4.7	FL350	-54.1	2.3	3:44	FL369	-56.3	2.1	2:09
													FL410	-70.7	1.9	3:44	FL430	-55.7	2.1	1:09
BAH-JFK	12/ 8/76	159	13:25		-58	FL430	9:46	56.1N	43.1W	FL387	-50.4	5.0	FL350	-55.9	3.8	3:44	FL390	-56.4	5.0	5:54
													FL430	-53.9	1.0	2:30				
BAH-JFK	12/ 8/78	147	12:49		-65	FL430	12:44	42.4N	71.3W	FL378	-52.4	5.4	FL279	-37.4	1.6	1:04	FL309	-49.5	.9	1:30
													FL389	-50.9	2.4	4:11	FL429	-53.0	3.0	5:58
BAH-JFK	12/20/78	146	12:24		-71	FL391	8:39	56.7N	34.4W	FL372	-56.8	6.7	FL350	-52.1	4.1	5:25	FL390	-50.1	3.7	4:24
													FL430	-61.3	2.7	1:39				
BAH-JFK	12/22/78	142	11:58		-62	FL350	3:53	43.7N	21.6E	FL375	-53.3	3.9	FL350	-56.8	5.7	5:55	FL391	-57.1	7.4	4:24
													FL430	-61.5	1.6	1:15				
													FL350	-55.5	3.4	4:34	FL390	-51.9	2.4	4:19
BAH-KUL	1/ 3/78	70	5:49		-49	FL371	3:29	12.0N	82.5E	FL356	-45.0	4.6	FL410	-50.4	1.3	1:45				
BAH-KUL	1/12/77	67	5:34		-45	FL330	1:14	21.2N	66.4E	FL330	-41.5	2.9	FL329	-39.0	1.3	1:39	FL370	-48.2	.7	3:54
BAH-KUL	5/25/77	73	5:57		-41	FL330	1:24	21.0N	66.9E	FL329	-38.0	1.9	FL330	-41.7	2.7	5:24				
BAH-KUL	5/28/77	71	6:04		-39	FL331	0:14	24.1N	55.9E	FL329	-36.7	1.7	FL330	-38.3	1.4	5:46				
BAH-KUL	8/ 5/77	73	6:05		-37	FL330	4:10	10.3N	86.2E	FL327	-33.8	3.5	FL330	-37.0	1.2	5:44				
BAH-KUL	10/18/77	68	5:59		-48	FL370	3:24	12.6N	81.0E	FL350	-42.5	4.8	FL329	-34.6	1.9	5:40				
BAH-KUL	10/20/76	69	5:49		-36	FL290	0:00	24.8N	53.8E	FL290	-28.2	2.4	FL330	-38.0	1.3	2:54	FL369	-47.1	.4	2:49
BAH-KUL	11/ 8/77	69	5:54		-38	FL331	2:04	19.2N	72.6E	FL316	-34.7	3.6	FL290	-28.2	2.4	5:49				
BAH-KUL	11/11/77	68	5:56		-42	FL330	3:51	10.7N	84.8E	FL315	-34.3	3.5	FL290	-30.3	.9	1:45	FL330	-37.2	.8	3:49
BAH-KUL	11/25/77	67	5:54		-38	FL290	0:04	24.5N	54.3E	FL291	-28.9	2.7	FL290	-30.1	.8	2:04	FL330	-36.9	1.3	3:41
BAH-KUL	12/13/77	69	5:49		-45	FL330	1:44	20.1N	69.6E	FL330	-40.5	2.6	FL290	-30.9	3.1	1:49	FL290	-27.5	.5	3:45
BAH-KUL	12/22/76	70	5:52		-47	FL330	0:19	24.0N	56.7E	FL325	-39.1	5.3	FL330	-40.6	2.4	5:39				
BAH-LHR	7/13/77	22	2:00		-54	FL351	1:30	49.8N	7.8E	FL347	-50.5	3.2	FL329	-40.7	3.5	5:03				
BAH-LHR	8/ 6/77	67	5:30		-46	FL310	4:45	49.3N	9.9E	FL310	-37.6	6.0	FL350	-51.1	1.6	1:54				
BAH-LHR	8/18/77	68	5:31		-49	FL347	4:51	49.5N	10.2E	FL315	-37.3	6.1	FL310	-37.8	5.9	5:19				
BAH-LHR	8/31/77	65	5:30		-44	FL310	4:39	49.2N	11.4E	FL309	-36.0	5.2	FL310	-36.3	4.4	4:36				
BAH-LHR	11/10/77	71	5:54		-59	FL350	2:19	39.5N	34.9E	FL350	-53.5	3.0	FL309	-36.2	4.9	5:19				
BAH-LHR	12/29/77	73	6:13		-62	FL351	2:07	39.1N	36.7E	FL336	-53.8	6.1	FL350	-53.6	2.6	5:49				
BAH-ORY	4/28/77	67	5:10		-46	FL281	2:14	40.1N	32.8E	FL281	-40.4	3.3	FL310	-46.7	4.6	1:27	FL350	-57.8	2.7	3:54
													FL280	-40.4	3.3	5:10				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----

ROUTE	MO/DY/YR	OBS	ETIM
BAH-SIN	1/21/77	74	6:03
BAH-SIN	4/29/77	70	5:59
BAH-SIN	6/23/77	66	6:19
BAH-SIN	7/14/77	74	6:28
BAH-SIN	8/ 8/77	74	6:34
BAH-SIN	8/20/77	70	6:19
BAH-SIN	8/25/77	76	6:32
BAH-SIN	9/ 1/77	74	6:24
BAH-SIN	10/ 1/76	72	6:16
BAH-SIN	10/15/77	71	6:04
BAH-SIN	12/22/77	70	5:54
BAH-SIN	12/31/77	73	6:19
BAH-VIE	5/27/77	47	4:19
BEG-BAH	6/22/77	25	2:50
BEG-BAH	8/24/77	37	3:21
BEG-LHR	1/11/77	22	1:45
BEG-LHR	5/24/77	18	1:34
BEG-LHR	10/19/76	20	1:38
BEG-LHR	12/21/76	20	1:34
BEG-ORY	3/17/77	17	1:19
BEG-ORY	8/19/76	15	1:10
BEY-KHI	3/17/75	41	3:01
BEY-THR	3/25/75	15	1:09
BGR-LAX	6/19/78	61	5:06
BGR-LAX	11/10/78	59	4:59
BGR-LAX	12/14/78	56	4:55
BKK-ATH	7/15/77	93	8:04
BKK-ATH	7/23/77	94	8:09
BKK-ATH	8/15/77	98	8:24
BKK-ATH	8/22/76	101	8:45
BKK-ATH	8/26/77	94	8:18
BKK-ATH	8/29/76	108	8:56
BKK-ATH	11/12/77	101	9:09
BKK-ATH	12/ 7/77	119	10:03
BKK-ATH	12/14/77	111	9:30
BKK-ATH	12/26/77	120	10:09
BKK-BAH	1/16/77	77	6:24
BKK-BAH	1/30/77	66	5:45
BKK-BAH	2/13/77	64	5:35
BKK-BAH	3/27/77	58	4:37
BKK-BAH	5/20/77	65	5:34
BKK-BAH	5/29/77	57	5:40
BKK-BAH	11/ 7/76	64	5:29
BKK-BAH	11/21/76	65	5:26
BKK-BAH	11/28/76	66	5:34
BKK-DAM	5/14/77	84	7:09

-----COLDEST OBSERVATION-----

T	FL	ETIM	LAT	LONG
-40	FL331	2:23	16.3N	75.4E
-40	FL330	0:39	23.1N	60.0E
-39	FL332	5:44	4.6N	93.5E
-47	FL370	5:53	5.0N	98.2E
-48	FL370	4:34	8.9N	88.6E
-27	FL291	4:19	9.3N	88.3E
-48	FL370	5:12	7.2N	93.4E
-38	FL329	4:59	7.5N	92.3E
-40	FL330	3:08	13.7N	79.2E
-38	FL332	1:54	19.7N	71.1E
-38	FL330	2:59	12.8N	80.5E
-49	FL370	1:54	19.6N	71.5E
-50	FL311	3:29	44.0N	25.2E
-38	FL291	0:00	42.0N	26.5E
-41	FL291	0:05	43.1N	22.7E
-64	FL350	0:09	45.7N	17.1E
-55	FL351	0:45	48.9N	12.3E
-52	FL329	0:30	48.2N	14.1E
-48	FL280	0:00	45.5N	17.9E
-48	FL310	0:10	45.8N	16.8E
-57	FL351	0:35	47.6N	11.9E
-61	FL370	1:26	32.8N	51.3E
-54	FL329	1:00	34.2N	47.9E
-56	FL390	3:52	36.9N	107.3W
-53	FL350	2:09	39.6N	92.4W
-60	FL349	2:20	43.1N	95.1W
-39	FL350	7:49	35.1N	26.6E
-37	FL351	5:20	32.9N	50.7E
-45	FL351	8:24	36.1N	25.2E
-46	FL350	8:20	35.0N	27.2E
-39	FL350	8:14	36.0N	25.3E
-47	FL351	8:52	36.9N	25.7E
-51	FL351	6:20	33.1N	49.8E
-60	FL391	9:28	35.0N	29.0E
-57	FL351	9:20	35.2N	26.1E
-58	FL350	9:04	34.8N	33.8E
-50	FL350	5:00	23.0N	61.9E
-44	FL310	5:45	25.8N	52.6E
-39	FL310	4:49	24.2N	58.3E
-52	FL350	2:11	19.2N	71.7E
-48	FL350	5:19	25.4N	54.6E
-44	FL351	5:25	25.5N	54.3E
-48	FL350	4:49	24.4N	57.8E
-49	FL350	5:22	25.7N	52.7E
-36	FL310	4:54	24.4N	57.7E
-45	FL311	7:04	33.5N	38.9E

-----MEAN-----

FL	T	SD
FL317	-36.4	3.2
FL328	-37.9	2.7
FL319	-31.8	6.8
FL323	-32.6	8.0
FL334	-35.9	9.7
FL291	-24.9	1.2
FL331	-35.8	7.6
FL316	-31.6	6.3
FL318	-35.7	4.2
FL318	-34.6	3.4
FL310	-35.5	2.3
FL358	-45.3	3.7
FL309	-46.3	2.7
FL290	-27.6	6.1
FL290	-27.1	5.2
FL343	-56.6	4.8
FL339	-52.8	2.5
FL333	-47.8	2.7
FL280	-46.5	1.2
FL297	-45.0	3.1
FL332	-51.4	4.5
FL356	-54.8	4.1
FL326	-51.5	2.5
FL367	-51.5	5.1
FL347	-51.0	2.3
FL342	-52.4	5.0
FL312	-27.0	4.1
FL314	-27.2	4.4
FL322	-30.9	6.7
FL337	-37.5	5.4
FL319	-29.4	5.9
FL327	-34.7	6.6
FL315	-39.8	6.2
FL345	-48.6	7.6
FL327	-43.1	7.8
FL325	-40.7	9.3
FL322	-40.3	6.4
FL310	-37.2	2.6
FL307	-34.9	1.7
FL318	-41.5	9.7
FL330	-38.4	6.6
FL330	-36.1	5.7
FL340	-41.7	5.5
FL327	-37.6	6.1
FL309	-33.1	2.3
FL305	-36.7	7.3

-----FLIGHT SEGMENTS-----

FL	T	SD	ETIM	FL	T	SD	ETIM
FL290	-33.4	4.0	1:52	FL330	-38.0	.8	4:04
FL330	-38.5	1.1	5:39				
FL290	-22.0	.7	1:44	FL331	-36.3	1.7	4:24
FL289	-21.8	.5	1:49	FL330	-35.4	1.1	3:38
FL290	-22.0	.5	1:09	FL330	-34.2	1.9	2:34
FL369	-47.3	.8	2:05				
FL290	-24.9	1.2	6:19				
FL329	-35.3	1.2	3:42	FL369	-47.6	.5	1:19
FL289	-23.1	.3	1:50	FL328	-35.8	1.8	4:24
FL290	-29.7	.9	1:49	FL330	-38.5	.5	0:00
FL290	-29.7	1.5	1:29	FL330	-36.7	.7	4:09
FL290	-34.0	1.8	2:39	FL330	-37.4	.5	2:54
FL330	-39.9	1.4	1:45	FL352	-47.6	.7	4:24
FL310	-46.5	2.3	3:59				
FL290	-27.8	6.1	2:50				
FL290	-26.8	5.0	3:15				
FL350	-57.3	4.3	1:29				
FL350	-54.5	.5	1:04				
FL280	-46.6	1.0	1:30				
FL369	-56.3	2.7	2:23				
FL328	-52.1	1.0	1:04				
FL350	-47.4	1.2	1:19	FL370	-53.5	1.3	1:48
FL390	-55.6	.6	1:28				
FL349	-51.5	.9	4:39				
FL349	-53.8	4.0	4:05				
FL309	-26.2	1.1	4:55	FL350	-35.7	1.4	1:04
FL310	-25.2	1.1	4:29	FL350	-35.9	.6	1:15
FL310	-27.9	.3	1:09				
FL310	-26.8	.9	4:39	FL350	-39.6	1.6	2:45
FL310	-30.3	.6	2:19	FL350	-41.1	1.6	6:00
FL280	-21.9	1.1	1:04	FL310	-26.5	1.0	4:00
FL350	-36.9	.9	2:50				
FL311	-29.7	.7	3:39	FL350	-41.0	2.7	4:07
FL281	-26.2	1.1	1:05	FL310	-39.6	2.1	4:54
FL310	-42.5	.7	1:09				
FL310	-38.7	3.7	2:45	FL350	-51.6	2.5	5:18
FL390	-57.1	1.9	1:30				
FL310	-38.0	1.9	4:24	FL350	-50.5	2.3	4:20
FL309	-34.2	.4	1:24	FL309	-34.6	.8	2:05
FL349	-49.5	4.3	4:55				
FL309	-35.1	1.1	3:00	FL350	-48.3	1.2	2:15
FL310	-37.3	2.3	5:40				
FL310	-34.5	1.2	4:45	FL350	-50.7	.8	2:15
FL280	-30.9	2.0	1:56	FL350	-44.5	1.8	2:45
FL311	-32.4	.6	2:24	FL350	-41.6	1.0	2:39
FL310	-30.9	.5	2:24	FL350	-44.7	1.7	4:05
FL310	-32.1	.3	1:05	FL349	-43.9	2.0	2:24
FL309	-32.4	.5	2:47				
FL309	-33.4	1.7	5:24	FL310	-39.9	3.6	5:50
FL280	-23.2	.9	1:15				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BKK-DAM	8/18/76	80	6:45	-40	FL350	6:09	34.1N	44.1E	FL315	-29.9	6.0	FL280	-23.3	.8	1:39	FL310	-27.5	.6	2:39
BKK-DAM	10/ 6/76	87	6:51	-43	FL310	5:49	33.3N	48.4E	FL305	-35.9	6.0	FL350	-38.7	.7	1:49				
BKK-DAM	11/10/76	90	7:35	-55	FL350	6:20	33.2N	49.0E	FL316	-40.0	8.9	FL280	-25.7	.5	1:02	FL310	-38.2	3.9	0:00
BKK-DAM	12/ 4/76	92	7:49	-52	FL348	6:34	33.2N	49.0E	FL314	-41.7	6.6	FL310	-37.7	3.5	4:34	FL349	-53.0	1.6	1:45
BKK-DEL	1/23/76	40	3:00	-59	FL350	2:20	24.9N	84.5E	FL345	-52.1	6.9	FL310	-41.1	3.5	5:54	FL349	-51.6	.5	1:09
BKK-DEL	3/12/75	37	3:00	-48	FL350	1:09	21.4N	90.7E	FL347	-45.9	3.0	FL350	-53.9	4.3	2:34				
BKK-DEL	3/19/76	34	2:34	-54	FL350	2:07	25.9N	82.6E	FL341	-46.8	6.9	FL350	-46.7	.6	2:45				
BKK-DEL	3/24/77	34	2:49	-55	FL351	2:34	26.8N	80.9E	FL340	-48.0	6.7	FL350	-50.2	3.2	0:00				
BKK-DEL	3/31/77	34	2:53	-53	FL350	2:48	27.4N	79.5E	FL340	-43.4	6.7	FL350	-51.7	1.7	2:00				
BKK-DEL	4/ 8/77	38	3:10	-44	FL351	2:55	27.0N	80.3E	FL328	-37.1	4.4	FL310	-44.4	1.4	1:19	FL350	-41.4	1.6	1:20
BKK-DEL	4/19/77	35	2:49	-48	FL351	2:30	26.4N	81.7E	FL343	-42.5	4.8	FL350	-44.4	1.4	2:15				
BKK-DEL	7/28/77	36	2:45	-40	FL351	0:19	17.1N	96.2E	FL347	-36.8	3.4	FL350	-37.7	1.5	2:20				
BKK-DEL	8/13/76	34	2:38	-40	FL350	0:14	16.8N	96.9E	FL346	-37.0	3.0	FL349	-37.6	1.6	0:00				
BKK-DEL	9/ 6/76	32	2:35	-40	FL352	0:15	17.0N	96.4E	FL345	-37.4	4.8	FL350	-39.1	1.0	2:15				
BKK-DEL	10/21/77	32	2:39	-48	FL350	2:39	27.4N	79.7E	FL331	-40.5	6.8	FL349	-46.1	.7	1:24				
BKK-DEL	10/27/77	30	2:50	-47	FL351	2:45	27.5N	79.4E	FL337	-41.4	6.5	FL350	-45.4	.8	2:05				
BKK-DEL	12/30/76	21	1:40	-44	FL351	1:40	23.1N	87.9E	FL312	-34.5	3.4	FL310	-34.1	1.0	1:19				
BKK-DRW	3/18/77	56	4:39	-38	FL331	0:10	9.7N	101.0E	FL330	-37.2	1.6	FL330	-37.4	.5	4:34				
BKK-DRW	4/ 1/77	57	4:26	-40	FL330	1:23	.6N	105.6E	FL329	-36.6	1.6	FL329	-36.9	.7	4:13				
BKK-DRW	4/22/77	53	4:34	-50	FL370	3:10	6.2S	118.5E	FL347	-42.9	8.1	FL370	-48.1	.5	2:45				
BKK-DRW	8/20/76	51	4:34	-50	FL370	3:39	8.1S	122.4E	FL338	-41.0	5.5	FL330	-39.1	.9	3:10				
BKK-DRW	10/ 8/76	51	4:07	-38	FL331	0:00	8.2N	101.6E	FL330	-37.5	1.3	FL330	-37.7	.4	4:02				
BKK-DRW	11/12/76	56	4:43	-39	FL330	0:22	8.2N	100.7E	FL329	-37.4	1.8	FL330	-37.7	.8	4:33				
BKK-HKG	1/ 7/77	29	2:30	-51	FL370	0:15	9.3N	103.3E	FL365	-49.1	3.9	FL370	-50.4	.6	2:09				
BKK-HKG	3/18/75	19	1:30	-41	FL329	0:05	14.6N	102.8E	FL327	-39.4	1.7	FL329	-39.9	.5	1:19				
BKK-HKG	3/24/76	31	2:34	-41	FL331	0:35	8.0N	104.1E	FL330	-40.2	1.2	FL330	-40.4	.7	2:29				
BKK-HKG	3/26/75	22	1:36	-51	FL369	0:15	15.1N	104.5E	FL352	-46.1	7.9	FL369	-50.2	.5	1:19				
BKK-HKG	3/29/77	32	2:34	-31	FL290	2:24	19.5N	113.0E	FL290	-28.8	1.1	FL290	-28.8	1.1	2:34				
BKK-HKG	4/11/79	19	1:34	-60	FL410	1:19	19.4N	112.1E	FL399	-56.3	7.4	FL410	-59.1	.2	1:19				
BKK-HKG	4/20/76	32	2:41	-51	FL371	0:25	8.6N	103.0E	FL368	-49.5	2.6	FL370	-50.1	.6	2:31				
BKK-HKG	5/25/79	20	1:34	-47	FL371	0:15	15.2N	104.7E	FL359	-43.6	6.6	FL370	-46.5	.5	1:14				
BKK-HKG	6/ 6/79	20	1:45	-59	FL411	0:05	14.6N	103.1E	FL405	-56.9	6.0	FL410	-58.4	.5	1:34				
BKK-HKG	6/26/77	34	2:49	-49	FL371	0:34	8.4N	103.9E	FL366	-46.5	4.8	FL370	-47.8	1.2	2:35				
BKK-HKG	8/16/78	40	3:00	-62	FL410	0:39	8.2N	103.9E	FL401	-57.1	6.7	FL409	-59.5	1.4	2:43				
BKK-HKG	8/18/76	38	1:38	-45	FL370	0:26	8.2N	102.8E	FL365	-42.6	3.8	FL368	-43.5	.8	0:00				
BKK-HKG	8/25/77	33	2:44	-50	FL371	0:41	8.3N	105.2E	FL366	-47.0	3.8	FL370	-48.1	1.0	2:24				
BKK-HKG	9/11/77	33	2:44	-49	FL371	0:24	9.1N	103.5E	FL365	-45.7	5.5	FL370	-47.3	.8	2:24				
BKK-HKG	9/13/78	35	2:59	-62	FL410	0:39	8.1N	103.9E	FL404	-58.3	6.1	FL410	-60.0	1.2	2:44				
BKK-HKG	9/15/78	31	2:45	-40	FL331	0:15	9.9N	103.1E	FL330	-38.4	1.6	FL330	-38.6	.8	2:35				
BKK-HKG	10/12/77	33	2:39	-51	FL371	2:29	19.6N	113.0E	FL367	-48.6	3.3	FL370	-49.4	.6	2:24				
BKK-HKG	10/15/77	28	2:23	-41	FL332	2:23	19.8N	113.1E	FL328	-37.5	3.5	FL331	-38.4	.9	2:10				
BKK-HKG	10/17/76	40	2:44	-48	FL370	2:34	19.4N	113.0E	FL367	-45.9	3.3	FL369	-46.5	.9	2:33				
BKK-HKG	10/19/77	33	2:39	-49	FL372	0:24	9.0N	103.4E	FL368	-47.3	3.5	FL371	-48.3	.8	2:25				
BKK-HKG	10/25/77	22	1:55	-50	FL371	1:07	14.5N	110.9E	FL363	-47.7	4.9	FL370	-49.5	.5	1:48				
BKK-HKG	11/ 3/78	19	1:29	-49	FL370	1:00	17.7N	110.5E	FL360	-45.7	5.1	FL369	-48.2	.4	1:09				
BKK-HKG	12/ 8/78	17	1:19	-41	FL330	0:04	15.0N	104.0E	FL325	-39.6	3.4	FL330	-40.7	.5	1:09				
BKK-KHI	12/21/76	33	2:39	-30	FL290	2:34	20.2N	113.3E	FL289	-28.0	1.0	FL289	-28.2	.5	2:35				
BKK-KHI	2/23/77	31	4:06	-47	FL350	3:29	23.1N	72.7E	FL347	-44.4	4.1	FL350	-45.4	.8	3:46				
BKK-KHI	6/23/77	43	3:22	-50	FL391	2:47	22.8N	73.5E	FL359	-41.6	4.1	FL350	-39.5	1.0	2:22				
BKK-KHI	8/27/77	42	3:30	-43	FL351	0:25	15.2N	94.2E	FL346	-39.5	4.2	FL350	-40.6	1.5	3:09				
BKK-KHI	10/ 8/77	42	3:44	-45	FL351	2:34	21.6N	77.4E	FL323	-37.0	5.3	FL310	-33.5	.7	2:20				
BKK-MEL	8/11/76	89	7:35	-58	FL330	7:15	36.1S	140.5E	FL317	-40.1	10.2	FL289	-30.1	.9	1:24	FL330	-44.8	7.9	5:20

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	CBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BKK-MEL	8/16/76	83	7:06	-52	FL370	6:06	31.9S	133.3E	FL338	-41.7	7.6	FL330	-39.3	.8	3:30	FL370	-50.6	1.0	2:24
BKK-MEL	8/24/76	87	7:25	-60	FL370	7:15	36.5S	141.0E	FL326	-38.3	10.4	FL290	-27.2	.7	2:14	FL330	-38.3	2.1	2:55
BKK-MEL	8/31/76	87	7:14	-50	FL365	7:14	37.2S	143.0E	FL346	-40.7	4.4	FL330	-38.5	.5	2:49	FL351	-43.4	.7	1:25
BKK-MEL	12/ 9/77	87	7:34	-47	FL330	6:59	34.4S	137.5E	FL318	-37.4	7.6	FL370	-43.8	2.1	2:04	FL330	-41.9	4.0	5:13
BKK-MEL	12/17/77	86	7:30	-53	FL370	7:00	35.2S	138.8E	FL331	-39.1	8.4	FL291	-27.5	1.9	2:00	FL330	-38.6	2.1	3:49
BKK-PER	7/25/77	61	5:19	-40	FL370	3:45	18.4S	111.2E	FL328	-36.5	4.0	FL369	-60.9	1.0	1:31	FL330	-39.2	1.6	1:19
BKK-PER	11/14/77	59	5:04	-49	FL370	3:50	19.0S	111.5E	FL344	-40.7	5.9	FL330	-36.5	.9	2:55	FL370	-48.5	.6	1:39
BKK-SIN	2/ 1/77	14	1:05	-49	FL370	0:50	5.0N	102.8E	FL366	-46.8	3.4	FL331	-37.1	.6	3:00				
BKK-SIN	2/15/77	15	1:15	-48	FL370	0:15	10.2N	101.4E	FL359	-44.9	6.8								
BKK-SIN	2/23/77	14	1:05	-28	FL290	0:25	8.5N	101.5E	FL289	-27.1	1.8								
BKK-SIN	3/29/77	14	1:04	-48	FL371	0:04	10.7N	100.6E	FL368	-47.1	1.8								
BKK-SIN	5/16/77	12	1:04	-48	FL371	0:09	10.0N	101.3E	FL360	-45.0	5.8								
BKK-SIN	5/22/77	14	1:03	-48	FL371	0:53	4.5N	103.0E	FL359	-44.2	7.2								
BKK-SIN	6/ 1/77	14	1:09	-49	FL370	0:59	4.2N	103.1E	FL356	-44.0	7.5								
BKK-SIN	6/11/77	13	1:09	-48	FL371	1:09	3.2N	103.5E	FL358	-43.5	7.5								
BKK-SIN	7/17/77	13	1:04	-47	FL370	0:24	8.7N	101.4E	FL358	-43.5	7.7								
BKK-SIN	8/17/77	14	1:03	-36	FL331	0:40	6.1N	102.5E	FL326	-34.1	2.7								
BKK-SIN	10/27/76	14	1:04	-50	FL370	0:40	6.1N	102.4E	FL367	-48.5	2.7								
BKK-SIN	11/ 6/76	14	1:05	-43	FL370	0:20	9.4N	101.3E	FL354	-43.7	8.4								
BKK-SIN	11/ 9/76	15	1:10	-38	FL330	0:11	10.6N	100.7E	FL321	-35.7	4.9								
BKK-SIN	11/30/76	14	1:04	-28	FL290	0:00	11.2N	100.6E	FL289	-27.5	.8								
BKK-SIN	12/ 6/76	13	1:09	-49	FL370	0:15	9.8N	101.0E	FL359	-45.8	7.2								
BKK-SIN	12/28/77	14	1:10	-48	FL370	0:49	5.6N	102.5E	FL362	-44.9	6.5								
BKK-SIN	12/30/76	15	1:15	-48	FL370	0:15	10.1N	100.8E	FL358	-44.7	7.4								
BKK-THR	2/21/77	74	6:35	-54	FL349	3:05	28.6N	77.0E	FL330	-45.0	7.9	FL309	-37.5	3.7	2:54	FL349	-52.0	1.4	3:24
BKK-THR	3/16/77	71	6:03	-45	FL310	6:00	34.1N	53.2E	FL309	-40.0	2.7	FL310	-40.2	2.4	5:54				
BKK-THR	3/30/77	75	5:27	-55	FL350	5:19	33.7N	53.6E	FL331	-46.0	7.1	FL310	-39.7	1.9	2:41	FL350	-52.1	1.2	2:22
BKK-THR	4/20/77	69	5:54	-52	FL310	5:50	33.6N	53.7E	FL310	-39.4	5.7	FL310	-39.7	5.1	5:39				
BKK-THR	5/20/78	71	6:04	-46	FL350	5:39	32.8N	55.3E	FL343	-38.2	5.0	FL350	-40.2	2.5	5:00				
BKK-THR	6/ 9/77	61	5:11	-42	FL351	5:07	33.8N	53.5E	FL331	-35.3	4.4	FL311	-31.0	.7	2:46	FL351	-39.5	1.3	0:00
BKK-THR	8/ 9/76	62	5:22	-38	FL350	5:21	34.6N	52.7E	FL316	-29.0	3.6	FL309	-27.5	1.2	4:15				
BKK-THR	8/14/76	49	4:09	-38	FL350	1:20	28.4N	77.4E	FL330	-32.7	7.2	FL350	-37.4	.5	2:50				
BKK-THR	10/25/76	59	6:17	-55	FL350	5:52	32.9N	55.0E	FL346	-46.0	6.2	FL350	-47.3	3.7	5:15				
BKK-THR	11/ 4/76	70	5:50	-46	FL310	5:20	32.1N	56.5E	FL310	-37.5	3.6	FL309	-37.6	3.3	5:45				
BNE-AKL	12/25/77	21	1:54	-48	FL330	1:29	35.0S	168.1E	FL319	-42.7	3.1								
BNE-DRW	2/ 9/78	32	2:39	-43	FL351	0:19	25.1S	148.0E	FL348	-41.0	3.0	FL350	-41.7	.8	2:24				
BOM-AMS	6/24/77	83	7:17	-55	FL350	6:24	47.9N	14.4E	FL310	-34.0	11.1	FL280	-20.8	.7	1:06	FL310	-27.1	.7	1:39
BOM-AMS												FL310	-37.2	7.2	2:34				
BOM-AMS												FL430	-63.0	1.6	2:15				
BOM-BAH	1/ 3/79	29	2:40	-66	FL430	0:15	19.3N	69.7E	FL420	-61.1	7.0	FL430	-64.0	2.4	2:37				
BOM-BAH	1/10/79	34	2:46	-66	FL430	0:20	19.3N	69.1E	FL427	-63.5	3.6	FL430	-58.4	1.4	2:34				
BOM-BAH	1/17/79	34	2:50	-61	FL430	0:25	19.4N	68.7E	FL425	-58.0	2.3	FL390	-50.7	.5	1:54				
BOM-BAH	8/28/78	27	2:13	-51	FL391	0:10	19.3N	69.8E	FL383	-48.7	6.6	FL430	-62.3	.8	2:04				
BOM-BAH	9/27/78	29	2:19	-64	FL432	0:09	19.3N	69.9E	FL423	-60.3	7.5	FL430	-65.1	.6	2:10				
BOM-BAH	10/11/78	28	2:24	-66	FL431	0:45	21.0N	65.5E	FL422	-62.8	7.8	FL431	-64.4	.7	2:06				
BOM-BAH	10/13/78	29	2:21	-65	FL432	0:34	20.6N	66.6E	FL425	-62.8	5.4	FL350	-45.5	1.2	2:14				
BOM-BAH	11/10/77	26	2:14	-47	FL351	1:29	24.3N	58.0E	FL351	-45.5	1.2	FL390	-59.4	.7	2:34				
BOM-BAH	11/23/78	36	2:43	-61	FL391	1:45	23.5N	59.3E	FL398	-58.6	2.6	FL430	-67.8	.5	2:24				
BOM-BAH	11/25/78	31	2:35	-69	FL430	1:45	23.6N	53.3E	FL428	-67.2	2.5	FL430	-65.7	1.8	2:34				
BOM-BAH	12/ 1/78	31	2:45	-69	FL430	2:20	24.6N	55.1E	FL427	-64.9	4.4	FL390	-60.1	1.2	2:19				
BOM-BAH	12/ 8/78	29	2:30	-62	FL390	1:15	22.4N	62.3E	FL386	-59.1	4.2								

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BOM-BAH	12/20/78	32	2:38	-66	FL430	0:09	19.1N	70.5E	FL423	-58.1	4.9	FL430	-58.9	3.1	2:25				
BOM-BAH	12/22/78	32	2:35	-62	FL430	0:10	19.2N	70.3E	FL425	-57.9	4.0	FL430	-58.9	2.2	2:19				
BOM-BKK	5/24/79	37	3:00	-48	FL371	1:10	17.5N	84.4E	FL361	-44.2	5.4	FL370	-46.6	.9	2:24				
BOM-FRA	11/14/76	86	7:24	-57	FL350	5:05	39.9N	33.5E	FL332	-47.2	8.8	FL310	-38.6	4.9	3:04	FL349	-54.0	3.2	4:05
BOM-LHR	1/7/77	99	8:39	-64	FL350	5:45	41.0N	28.4E	FL327	-51.0	10.5	FL280	-30.9	.8	1:15	FL310	-46.2	4.0	2:49
BOM-LHR	1/23/77	108	9:19	-66	FL350	9:04	50.9N	4.9E	FL331	-52.7	12.0	FL350	-59.5	2.0	4:19				
BOM-LHR	4/3/77	96	8:19	-55	FL350	5:54	42.3N	25.5E	FL332	-46.4	5.8	FL309	-41.3	8.9	3:54	FL349	-62.0	1.9	5:05
BOM-LHR	4/6/77	103	8:26	-60	FL350	7:11	47.8N	14.4E	FL325	-46.7	8.1	FL309	-41.8	3.9	3:25	FL349	-50.1	3.2	4:39
BOM-LHR	4/24/77	102	8:36	-58	FL350	4:58	40.0N	32.9E	FL324	-45.9	9.3	FL310	-42.7	4.2	4:22	FL350	-54.0	4.9	3:30
BOM-LHR	5/3/77	94	8:10	-57	FL350	6:05	42.9N	23.1E	FL317	-42.9	11.3	FL280	-28.8	.9	1:05	FL310	-43.5	5.8	3:28
BOM-LHR	7/13/76	96	8:11	-54	FL350	6:56	47.1N	15.2E	FL333	-38.9	11.3	FL350	-53.3	3.8	3:43				
BOM-LHR	7/20/77	97	7:40	-56	FL351	6:23	46.8N	15.6E	FL338	-41.9	9.7	FL279	-25.1	.7	1:10	FL310	-41.4	6.4	4:24
BOM-LHR	7/27/77	91	8:09	-57	FL351	7:39	50.0N	7.9E	FL327	-35.1	12.4	FL350	-56.0	.9	2:15				
BOM-LHR	8/3/76	93	7:56	-54	FL351	6:31	46.4N	16.0E	FL318	-36.5	11.3	FL309	-27.1	.8	3:00	FL349	-47.3	6.8	4:45
BOM-LHR	8/6/76	98	8:07	-54	FL351	6:46	46.8N	15.6E	FL322	-35.4	11.7	FL310	-29.9	1.0	2:16	FL351	-47.5	5.9	4:51
BOM-LHR	8/9/77	93	8:00	-53	FL350	6:09	44.1N	21.0E	FL330	-37.1	10.4	FL280	-19.7	.9	2:19	FL350	-43.6	7.7	4:50
BOM-LHR	9/26/76	97	7:32	-57	FL350	4:43	40.4N	30.6E	FL331	-44.5	10.6	FL310	-30.2	2.2	3:54	FL350	-51.2	1.8	2:16
BOM-LHR	10/10/76	96	7:37	-55	FL350	3:53	38.6N	39.9E	FL329	-46.8	9.8	FL279	-21.6	1.0	1:15	FL310	-28.2	1.5	3:22
BOM-LHR	10/15/76	100	8:21	-59	FL349	6:50	45.2N	18.4E	FL340	-48.1	7.7	FL350	-48.4	5.9	3:15				
BOM-LHR	10/23/77	98	8:24	-58	FL351	7:15	47.1N	15.2E	FL333	-46.5	12.0	FL280	-21.8	.4	1:05	FL310	-29.1	.7	1:24
BOM-LHR	11/20/77	98	8:54	-60	FL390	7:19	45.8N	16.9E	FL353	-49.3	8.9	FL349	-43.8	6.4	4:54				
BOM-LHR	12/2/77	105	8:44	-58	FL350	8:33	50.9N	4.5E	FL326	-47.3	9.1	FL280	-26.2	.9	1:21	FL309	-35.4	1.5	1:25
BOM-LHR	12/9/76	109	9:19	-54	FL310	4:00	37.5N	45.8E	FL321	-44.0	7.4	FL349	-51.9	3.0	0:00				
BOM-LHR	12/28/76	108	9:14	-61	FL348	8:49	51.6N	1.2E	FL314	-48.8	7.5	FL280	-27.9	1.4	1:10	FL309	-41.4	2.7	1:33
BOM-PER	1/8/77	84	7:05	-43	FL340	3:50	8.5S	93.5E	FL328	-38.6	4.1	FL349	-53.9	.7	4:18				
BOM-PER	1/18/77	85	7:14	-44	FL340	6:29	26.4S	109.7E	FL329	-37.9	4.5	FL310	-36.3	2.7	1:45	FL349	-51.8	4.1	6:21
BOM-PER	1/24/77	87	7:22	-43	FL340	3:00	3.4S	88.6E	FL329	-38.7	4.6	FL280	-26.2	1.2	1:39	FL350	-53.9	3.3	5:54
BOM-PER	4/4/77	85	7:19	-57	FL381	6:54	28.8S	111.8E	FL347	-42.8	8.4	FL309	-33.3	2.9	1:50	FL350	-53.4	4.0	4:15
BOM-PER	4/7/77	86	7:20	-49	FL341	6:45	27.5S	110.4E	FL336	-40.3	4.0	FL390	-53.7	3.0	2:20				
BOM-PER	4/25/77	85	7:20	-55	FL380	6:39	26.4S	109.7E	FL344	-42.3	7.6	FL279	-33.1	2.1	2:15	FL310	-45.4	1.9	1:09
BOM-PER	5/4/77	85	7:24	-49	FL341	7:15	30.3S	113.4E	FL330	-37.9	6.4	FL350	-53.8	2.4	4:59				
BOM-PER	6/26/77	79	6:49	-46	FL340	6:39	29.9S	113.0E	FL319	-36.0	6.7	FL280	-29.9	1.6	1:35	FL310	-46.7	3.4	3:35
BOM-PER	7/4/77	57	6:56	-44	FL341	3:03	4.9S	90.5E	FL338	-39.3	2.7	FL350	-47.8	3.0	3:50				
BOM-PER	7/28/77	85	6:55	-45	FL340	6:54	31.0S	114.4E	FL326	-36.7	5.7	FL310	-47.7	7.0	7:40				
BOM-PER	8/4/76	86	7:24	-48	FL323	7:24	31.2S	114.6E	FL326	-38.3	5.8	FL290	-30.9	.7	1:15	FL330	-39.4	.5	1:09
BOM-PER	8/7/76	80	7:00	-42	FL341	4:15	11.5S	96.2E	FL312	-34.4	5.2	FL340	-41.0	1.0	4:05				
												FL290	-28.9	1.5	1:14	FL330	-37.5	.5	1:09
												FL340	-40.5	1.4	4:09				
												FL289	-29.5	.5	1:09	FL330	-39.6	.5	1:30
												FL339	-41.2	1.1	4:26				
												FL331	-37.1	.4	2:05	FL340	-39.4	.6	1:45
												FL380	-53.1	2.4	2:35				
												FL330	-37.5	.5	2:39	FL340	-42.3	3.4	4:25
												FL330	-37.5	.8	2:15	FL340	-40.4	.7	2:09
												FL379	-53.2	2.0	2:05				
												FL331	-36.9	.6	1:35	FL340	-41.5	3.6	4:24
												FL290	-28.8	.9	2:09	FL340	-41.2	1.5	4:04
												FL331	-38.3	.7	1:09	FL340	-39.9	1.2	4:11
												FL290	-27.6	1.2	1:54	FL340	-40.2	1.5	4:19
												FL289	-27.8	1.5	1:25	FL330	-39.1	.5	1:20
												FL340	-41.6	.9	4:15				
												FL290	-29.5	1.3	2:40	FL301	-32.8	.4	1:09
												FL340	-40.6	.8	2:45				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BOM-PER	8/10/77	85	7:12	-46	FL360	4:42	13.8S	98.1E	FL330	-38.1	7.2	FL290	-28.0	1.0	1:07	FL330	-38.6	.8	2:30
BOM-PER	9/ 3/77	91	7:31	-50	FL325	7:31	30.8S	114.5E	FL328	-36.9	4.9	FL359	-45.0	.7	2:25	FL330	-38.4	.7	1:45
BOM-PER	9/27/76	89	7:32	-50	FL349	7:32	31.2S	114.8E	FL335	-40.1	6.3	FL291	-27.9	1.2	1:19	FL330	-38.5	.5	1:27
BOM-PER	10/12/76	82	7:22	-52	FL340	7:16	30.2S	113.4E	FL319	-35.8	7.0	FL340	-39.3	1.3	4:06	FL349	-43.9	.8	1:12
BOM-PER	10/16/76	58	6:55	-42	FL340	4:30	13.0S	97.5E	FL329	-37.3	6.1	FL290	-28.2	.6	1:04	FL339	-41.5	3.2	0:00
BOM-PER	10/24/77	79	7:07	-38	FL301	7:02	30.6S	113.8E	FL296	-30.1	3.6	FL340	-41.8	.4	1:35	FL330	-37.4	.5	1:06
BOM-PER	11/15/76	85	6:51	-47	FL340	6:38	29.7S	112.8E	FL329	-38.3	5.1	FL360	-46.6	1.5	1:33	FL300	-32.2	3.0	4:13
BOM-PER	11/21/77	68	7:19	-48	FL341	6:48	27.5S	110.4E	FL326	-37.9	6.0	FL290	-28.1	.4	2:48	FL340	-41.3	1.9	4:04
BOM-PER	11/23/76	87	7:24	-49	FL360	7:09	29.5S	112.7E	FL327	-37.4	8.0	FL290	-25.5	.8	1:09	FL330	-38.3	.5	1:15
BOM-PER	12/ 3/77	86	7:15	-48	FL341	7:00	29.6S	112.6E	FL330	-38.9	4.8	FL340	-41.1	.6	4:00	FL290	-28.0	.3	1:19
BOM-PER	12/10/76	89	7:16	-44	FL340	6:29	25.9S	109.2E	FL329	-39.1	4.4	FL340	-40.4	.5	1:39	FL360	-45.9	1.2	2:24
BOM-THR	1/ 7/79	41	3:24	-57	FL360	2:30	31.3N	57.9E	FL343	-50.1	6.9	FL291	-29.4	1.2	1:05	FL330	-37.9	.3	2:05
BOM-THR	2/25/79	42	2:41	-51	FL349	2:41	34.2N	51.6E	FL328	-36.2	7.8	FL340	-42.2	2.5	3:49	FL329	-39.1	.4	1:35
BOM-THR	7/30/78	38	2:54	-50	FL391	0:18	22.3N	72.4E	FL381	-46.5	6.3	FL350	-52.2	2.2	1:20	FL360	-55.7	.9	1:04
BOM-THR	8/31/78	38	3:05	-59	FL390	1:55	29.5N	60.9E	FL374	-54.2	6.5	FL310	-29.9	.5	1:14	FL350	-43.6	3.0	0:00
BOM-THR	11/25/78	40	3:24	-61	FL390	1:34	23.2N	59.6E	FL386	-58.0	4.3	FL391	-48.7	.8	2:31				
BOM-THR	12/17/78	40	3:19	-57	FL350	2:34	31.4N	57.8E	FL349	-50.9	4.9	FL390	-58.0	.4	2:04	FL390	-59.1	1.2	3:04
BOM-THR	12/23/78	39	3:15	-54	FL350	3:11	34.4N	52.9E	FL346	-44.9	5.4	FL350	-51.5	4.0	3:09				
BOS-DTW	10/ 8/77	13	1:00	-61	FL389	0:30	43.1N	76.6W	FL379	-56.6	4.6	FL350	-45.7	4.3	3:00				
BOS-LHR	3/24/78	54	4:34	-55	FL330	0:14	44.5N	64.5W	FL329	-53.0	1.7	FL330	-53.2	1.4	4:24				
BOS-LHR	5/ 1/78	57	5:09	-57	FL340	5:04	50.3N	4.2W	FL336	-48.9	5.3	FL339	-51.3	3.0	3:59				
BOS-LHR	7/10/76	58	4:59	-63	FL411	1:35	49.0N	49.8W	FL402	-53.4	6.7	FL391	-60.4	.7	1:19	FL411	-50.8	6.0	3:18
BOS-LHR	7/13/76	61	5:10	-60	FL371	2:24	48.9N	41.0W	FL368	-52.6	5.0	FL371	-53.1	4.3	5:01				
BOS-LHR	8/19/77	57	4:44	-57	FL370	4:19	50.0N	7.8W	FL368	-49.7	3.0	FL370	-50.1	2.0	4:29				
BOS-LHR	9/16/76	56	4:46	-54	FL369	4:11	52.8N	10.5W	FL318	-40.9	5.1	FL309	-39.2	2.7	3:56				
BOS-LHR	9/17/76	55	4:41	-53	FL350	1:49	50.6N	45.1W	FL346	-45.7	5.1	FL350	-46.7	4.6	4:01				
BOS-LHR	9/23/77	59	5:04	-61	FL370	4:24	52.3N	12.8W	FL352	-54.9	3.9	FL350	-54.4	2.8	4:04				
BOS-LHR	9/26/77	50	5:04	-65	FL410	0:34	46.0N	63.7W	FL406	-55.7	5.7	FL410	-56.0	5.3	4:39				
BOS-LHR	9/27/77	57	4:59	-69	FL410	0:55	47.5N	59.7W	FL408	-60.5	5.9	FL410	-60.8	5.7	4:44				
BOS-LHR	9/28/77	48	4:49	-66	FL410	2:04	50.8N	42.9W	FL407	-57.9	5.8	FL409	-58.3	5.5	4:29				
BOS-LHR	10/ 5/76	59	4:54	-60	FL410	4:04	50.0N	14.6W	FL400	-53.5	5.2	FL409	-52.9	5.0	3:34				
BOS-LHR	10/ 8/77	60	5:04	-61	FL410	1:54	48.6N	45.5W	FL407	-53.3	4.7	FL410	-53.6	4.6	4:44				
BOS-LHR	10/ 9/77	67	5:33	-60	FL370	1:04	51.9N	62.2W	FL400	-49.5	4.6	FL410	-47.5	2.0	4:13				
BOS-LHR	10/10/77	56	4:54	-66	FL412	0:10	43.5N	67.2W	FL407	-59.1	6.1	FL410	-59.4	5.7	4:24				
BOS-LHR	10/11/77	56	4:47	-67	FL410	4:37	52.1N	5.6W	FL396	-54.4	6.5	FL410	-55.7	6.2	3:24				
BOS-LHR	10/12/77	58	4:54	-64	FL410	4:49	50.3N	4.4W	FL399	-55.5	3.4	FL409	-55.4	3.0	3:34				
BOS-LHR	10/23/76	57	4:44	-61	FL358	4:44	50.6N	2.9W	FL368	-50.8	4.0	FL369	-50.8	3.8	4:29				
BOS-LHR	10/24/76	56	4:45	-59	FL349	0:04	43.2N	68.2W	FL381	-51.4	4.0	FL389	-52.2	4.0	3:15				
BOS-LHR	10/25/76	58	5:29	-60	FL389	0:16	44.1N	66.3W	FL395	-51.4	3.2	FL389	-51.6	3.8	3:17	FL409	-50.9	1.2	1:45
BOS-LHR	10/26/76	56	4:54	-68	FL390	0:24	44.6N	64.1W	FL401	-53.9	6.9	FL390	-64.4	4.2	1:14	FL409	-50.1	2.0	3:19
BOS-LHR	12/17/76	55	4:44	-58	FL340	1:04	49.6N	55.8W	FL336	-53.8	2.8	FL340	-53.4	3.0	3:09				
BOS-ORD	10/20/75	17	1:10	-51	FL382	0:05	43.0N	74.7W	FL363	-46.6	3.6								
BOS-SFO	5/12/75	57	4:43	-60	FL390	2:30	45.3N	99.2W	FL378	-53.0	3.4	FL390	-53.7	3.2	3:24				
BOS-SFO	10/ 8/75	60	4:53	-65	FL411	4:18	39.6N	115.5W	FL370	-51.6	6.4	FL351	-50.6	.7	2:25				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
BOS-SFO	12/30/75	64	5:15		-63	FL390	3:15	40.3N	102.1W	FL372	-55.1	4.0	FL349	-54.3	2.6	1:29	FL390	-56.7	4.1	2:47
BRU-JFK	5/26/78	76	6:18		-54	FL350	5:03	50.9N	62.2W	FL319	-46.4	4.3	FL310	-45.0	3.0	4:16	FL350	-51.7	2.6	1:34
BRU-JFK	10/30/76	83	7:02		-52	FL349	1:39	56.9N	17.9W	FL339	-44.5	4.3	FL309	-42.0	1.7	1:19	FL348	-45.4	4.0	5:22
CCS-GIG	1/17/78	56	4:43		-53	FL371	1:30	1.1N	57.6W	FL361	-48.1	4.5	FL370	-50.7	1.2	3:39				
CCS-GIG	4/ 8/76	52	4:30		-52	FL371	3:19	13.4S	49.3W	FL367	-49.6	3.4	FL370	-50.6	1.0	4:04				
CCS-GIG	4/24/76	51	4:20		-52	FL370	4:00	18.6S	46.4W	FL367	-49.4	3.4	FL369	-50.0	.8	4:05				
CCS-GIG	4/25/76	52	4:22		-52	FL371	2:54	11.6S	52.6W	FL353	-46.2	5.8	FL331	-39.8	.4	1:04	FL370	-50.6	.8	2:14
CCS-GIG	5/29/78	12	1:00		-38	FL330	0:24	5.8N	63.9W	FL326	-36.6	3.1								
CCS-GIG	8/14/78	53	4:24		-43	FL330	3:54	17.9S	46.8W	FL325	-39.8	3.0	FL329	-40.8	1.1	3:49				
CCS-GIG	9/ 2/76	55	4:32		-47	FL369	2:32	9.1S	55.0W	FL367	-44.9	2.7	FL369	-45.5	1.0	4:17				
CCS-GUA	1/18/78	31	2:40		-48	FL350	1:34	12.4N	81.0W	FL339	-43.8	5.4	FL350	-47.2	.7	1:54				
CCS-GUA	1/20/79	61	2:33		-48	FL350	1:55	13.2N	84.0W	FL346	-45.3	4.1	FL350	-46.4	.6	2:21				
CCS-GUA	4/ 7/79	28	2:15		-44	FL350	2:09	14.2N	88.2W	FL347	-41.8	3.5	FL350	-42.7	.6	2:06				
CCS-GUA	4/18/79	29	2:19		-44	FL351	0:40	11.1N	75.7W	FL349	-42.6	2.5	FL350	-43.1	.3	2:09				
CCS-GUA	4/24/78	25	2:05		-44	FL351	0:00	10.7N	71.9W	FL350	-43.4	.6	FL350	-43.4	.6	2:05				
CCS-GUA	4/26/76	30	2:30		-46	FL351	0:20	10.7N	71.6W	FL344	-43.4	5.4	FL350	-45.2	.7	2:10				
CCS-GUA	5/30/77	26	2:15		-34	FL310	0:04	10.7N	70.3W	FL309	-33.0	1.7	FL309	-33.3	.6	2:10				
CCS-GUA	7/ 9/77	30	2:24		-47	FL350	1:49	13.0N	84.6W	FL345	-44.8	4.3	FL350	-46.2	.5	2:04				
CCS-GUA	7/15/78	30	2:25		-47	FL350	0:15	11.0N	71.5W	FL345	-45.4	4.0	FL350	-46.8	.4	2:04				
CCS-GUA	7/19/78	30	2:15		-47	FL350	1:09	12.0N	79.6W	FL348	-45.2	2.9	FL350	-45.9	.5	2:05				
CCS-GUA	8/13/77	27	2:19		-47	FL350	1:34	12.9N	82.6W	FL344	-44.2	4.0								
CCS-GUA	8/15/78	15	2:11		-46	FL350	0:15	10.8N	73.8W	FL347	-44.3	1.8	FL349	-45.0	.7	1:55				
CCS-GUA	11/ 7/76	14	1:05		-42	FL348	0:05	12.1N	80.0W	FL348	-41.4	.6								
CCS-LAX	1/21/78	79	6:36		-60	FL390	3:56	28.6N	94.6W	FL362	-47.5	4.6	FL350	-45.2	.5	1:16	FL350	-49.3	.7	1:49
CCS-LAX	3/18/78	46	3:49		-53	FL350	1:15	28.3N	93.8W	FL333	-45.6	4.3	FL390	-49.0	4.0	2:34				
CCS-MIA	4/14/79	27	2:09		-56	FL391	1:49	23.6N	76.7W	FL382	-51.9	6.6	FL349	-48.7	2.9	2:09	FL310	-41.5	1.8	1:34
CCS-MIA	4/15/79	27	2:09		-57	FL390	1:44	23.1N	76.1W	FL388	-53.6	4.2	FL390	-54.2	.9	1:54				
CCS-MIA	4/15/79	25	2:11		-58	FL390	2:11	24.7N	78.4W	FL379	-51.3	8.4	FL390	-54.3	1.8	2:04				
CCS-MIA	4/16/79	25	2:00		-38	FL310	1:45	23.8N	76.9W	FL310	-34.4	2.3	FL390	-54.8	1.2	1:41				
CCS-MIA	4/16/79	28	2:14		-56	FL391	1:59	24.1N	77.3W	FL381	-51.2	7.5	FL310	-34.4	2.3	2:00				
CHC-CHC	11/14/76	75	4:41		-61	FL370	3:02	56.8S	173.9E	FL355	-55.8	3.7	FL390	-53.6	.9	1:59				
CHC-MEL	12/18/77	35	2:50		-53	FL390	0:25	42.1S	167.1E	FL383	-48.2	4.0	FL330	-52.4	1.0	1:52	FL370	-59.0	1.2	1:32
CHC-PPG	11/16/76	73	4:32		-54	FL389	3:46	18.7S	168.6W	FL352	-50.2	3.8	FL390	-48.3	3.6	2:24				
CHC-SYD	1/ 2/77	28	2:27		-54	FL390	2:19	35.2S	153.7E	FL365	-46.0	4.4	FL330	-48.9	1.1	1:23	FL350	-51.2	1.2	1:21
CHC-SYD	1/ 5/78	25	2:04		-60	FL391	1:30	37.0S	157.1E	FL361	-53.0	5.4								
CHC-SYD	1/26/78	26	2:09		-59	FL390	1:00	39.2S	161.7E	FL374	-55.0	7.1	FL389	-58.5	.7	1:04				
CHC-SYD	2/27/77	25	2:04		-51	FL350	0:19	41.5S	167.4E	FL347	-47.7	3.9	FL350	-48.5	1.9	1:54				
CHC-SYD	4/17/77	25	1:59		-50	FL311	0:30	40.5S	164.9E	FL309	-47.8	1.9	FL310	-48.3	.9	1:49				
CHC-SYD	8/26/76	27	2:09		-58	FL350	1:19	37.9S	159.0E	FL347	-54.7	2.6	FL350	-55.3	1.6	2:00				
CHC-SYD	12/19/76	25	2:04		-58	FL350	0:09	42.1S	169.0E	FL345	-50.7	4.4	FL350	-51.4	3.3	1:45				
CHC-SYD	12/19/77	29	2:29		-52	FL350	2:14	35.5S	154.4E	FL345	-46.7	4.2	FL350	-47.7	2.3	2:20				
CLE-MIA	3/23/75	20	1:31		-61	FL385	0:10	38.4N	82.3W	FL376	-57.6	7.1	FL389	-60.6	.7	1:11				
CLE-MIA	3/25/75	21	1:39		-61	FL391	1:29	28.7N	81.6W	FL378	-51.2	6.3	FL390	-52.9	5.3	1:09				
CLE-MIA	3/26/75	18	1:25		-59	FL390	0:26	36.0N	82.3W	FL382	-56.5	3.5	FL390	-57.7	.8	1:09				
CLE-MIA	3/27/75	19	1:30		-63	FL386	0:10	38.2N	81.8W	FL376	-56.8	7.7	FL389	-59.7	1.2	1:09				
CLE-MIA	3/28/75	17	1:30		-61	FL390	0:35	34.9N	82.1W	FL368	-55.4	6.9								
CLE-MIA	3/29/75	21	1:30		-62	FL391	0:20	37.3N	82.2W	FL364	-54.2	6.0								
CPH-JFK	7/ 7/77	75	6:30		-61	FL430	6:19	43.4N	70.6W	FL412	-50.6	5.3	FL389	-54.9	2.7	1:15	FL410	-50.4	4.3	2:44
CPH-JFK	7/11/77	79	6:39		-64	FL430	6:34	42.4N	71.4W	FL392	-51.4	6.4	FL429	-48.3	5.8	2:09				
CPH-JFK	7/16/77	80	6:54		-58	FL391	6:24	45.0N	69.6W	FL380	-48.7	5.7	FL370	-56.8	1.6	1:15	FL409	-47.0	4.3	3:19
CPH-JFK	8/ 6/77	79	6:54		-58	FL366	0:04	55.7N	9.1E	FL388	-50.0	3.3	FL370	-44.6	2.5	1:20	FL390	-49.3	5.8	4:30
													FL389	-50.0	3.1	6:39				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
CPH-JFK	8/ 9/77	90	7:34	-62	FL390	2:44	52.2N	24.9W	FL386	-55.2	4.1	FL390	-58.2	1.9	2:19	FL410	-50.1	2.3	1:04
CPH-JFK	8/10/77	67	6:04	-63	FL390	1:21	58.9N	9.5W	FL383	-53.3	6.3	FL390	-56.2	.8	2:30	FL390	-51.4	6.3	4:11
CPH-JFK	8/22/77	74	6:49	-57	FL411	6:39	42.9N	70.9W	FL404	-50.3	4.3	FL390	-52.5	3.5	1:04	FL410	-49.5	4.2	5:19
CPH-JFK	9/ 3/77	82	7:04	-64	FL410	6:49	43.8N	73.0W	FL377	-50.8	5.8	FL349	-54.3	.8	1:04	FL390	-45.2	1.4	1:39
CPH-JFK	9/ 4/77	76	6:53	-68	FL430	6:23	45.1N	69.2W	FL404	-49.5	7.6	FL410	-53.1	5.2	2:39	FL410	-53.4	4.5	2:05
CPH-JFK	9/ 9/77	83	7:09	-65	FL430	6:29	46.3N	68.1W	FL404	-51.8	5.5	FL390	-46.5	6.5	3:15	FL410	-46.7	.8	1:04
CPT-AKL	10/29/77	777	13:23	-71	FL369	5:39	80.3S	18.6E	FL383	-59.2	8.1	FL430	-46.5	7.5	2:08	FL410	-48.1	1.0	1:09
CUN-JFK	3/ 2/79	43	2:14	-63	FL370	1:55	36.3N	76.8W	FL349	-54.7	7.6	FL429	-49.2	2.3	3:24	FL369	-63.4	4.8	2:49
DAM-ATH	5/15/77	15	1:03	-55	FL350	0:19	34.9N	32.1E	FL343	-53.0	4.4	FL389	-55.2	1.0	2:50	FL409	-56.1	10.2	3:15
DAM-ATH	8/19/76	15	1:19	-40	FL350	1:00	35.0N	27.5E	FL347	-38.1	2.8	FL349	-56.9	2.4	2:49				
DAM-ATH	10/ 7/76	17	1:11	-53	FL350	0:47	35.0N	29.3E	FL345	-50.6	3.9	FL429	-58.6	4.8	2:04				
DAM-ATH	11/11/76	18	1:30	-56	FL350	0:40	34.9N	31.8E	FL335	-51.1	5.4	FL349	-55.2	1.0	2:50				
DAM-ATH	12/ 5/76	19	1:26	-53	FL350	0:09	35.2N	35.9E	FL342	-50.6	4.1	FL389	-66.9	2.4	2:49				
DAM-BAH	1/ 3/78	18	1:20	-51	FL331	0:40	30.1N	42.6E	FL324	-48.2	4.0	FL429	-51.0	3.4	1:02				
DAM-BAH	10/18/77	15	1:19	-45	FL331	0:19	31.3N	40.1E	FL321	-41.3	3.4	FL330	-48.8	2.1	1:34				
DAM-BAH	11/ 8/77	16	1:19	-48	FL330	0:15	31.6N	39.0E	FL323	-44.8	3.6	FL329	-46.0	1.3	1:04				
DAM-BAH	12/13/77	27	1:29	-58	FL371	1:12	28.1N	46.6E	FL345	-51.7	5.6	FL329	-45.7	3.5	6:26				
DAM-BKK	3/19/77	77	6:36	-49	FL330	0:25	34.0N	44.6E	FL329	-45.7	3.5	FL330	-50.4	3.3	2:37	FL330	-46.4	.5	1:13
DAM-BKK	4/ 1/77	83	6:55	-56	FL330	0:54	33.3N	48.3E	FL342	-48.2	3.1	FL369	-46.7	1.1	0:00	FL369	-49.0	1.2	2:05
DAM-BKK	4/22/77	76	6:29	-52	FL331	0:45	33.4N	47.9E	FL343	-49.2	1.9	FL331	-49.6	1.7	3:59	FL330	-41.9	3.6	5:00
DAM-BKK	10/ 8/76	78	6:48	-48	FL330	1:15	32.5N	52.7E	FL325	-41.5	4.0	FL330	-42.1	3.9	0:00				
DAM-BKK	11/12/76	76	6:20	-50	FL331	1:19	32.2N	53.4E	FL322	-42.0	3.2	FL290	-42.4	.7	1:04				
DEL-BKK	1/ 5/77	29	2:24	-53	FL370	0:09	26.9N	80.7E	FL366	-51.0	2.5	FL370	-51.7	1.1	2:09				
DEL-BKK	3/18/75	32	2:34	-52	FL370	2:09	16.7N	96.6E	FL364	-48.9	5.1	FL370	-50.4	1.1	2:19				
DEL-BKK	3/24/76	36	2:37	-53	FL370	0:08	26.7N	81.0E	FL365	-49.0	4.3	FL370	-49.9	1.4	2:23				
DEL-BKK	3/26/75	34	2:44	-56	FL363	0:09	27.0N	80.5E	FL364	-50.8	4.3	FL369	-51.7	1.3	2:29				
DEL-BKK	3/28/77	32	2:39	-61	FL411	1:34	20.9N	91.6E	FL363	-51.4	7.2	FL330	-45.9	1.4	1:09				
DEL-BKK	4/ 5/77	31	2:39	-57	FL371	0:09	27.2N	80.1E	FL365	-51.7	5.1	FL371	-53.0	2.2	2:24				
DEL-BKK	4/20/76	32	2:39	-59	FL411	2:15	16.9N	96.4E	FL387	-53.4	5.2	FL410	-57.6	1.0	1:15				
DEL-BKK	8/18/76	32	2:39	-33	FL330	2:25	16.0N	97.3E	FL328	-30.1	2.6	FL330	-30.7	1.1	2:25				
DEL-BKK	8/20/76	34	2:44	-37	FL330	2:30	15.7N	97.5E	FL323	-33.2	5.2	FL330	-35.2	1.0	2:19				
DEL-BKK	10/12/77	30	2:40	-51	FL371	1:45	19.8N	93.3E	FL367	-48.9	2.9	FL370	-49.7	.5	2:24				
DEL-BKK	10/16/76	33	2:45	-49	FL374	1:35	20.1N	91.2E	FL363	-45.4	5.5	FL369	-47.2	.8	2:24				
DEL-BKK	10/19/77	30	2:34	-51	FL371	0:30	25.6N	83.1E	FL365	-48.7	3.4	FL370	-49.6	.8	2:19				
DEL-BKK	10/24/77	27	2:31	-51	FL370	0:05	26.6N	81.3E	FL369	-49.5	.8	FL370	-49.6	.7	0:00				
DEL-BKK	12/ 3/78	31	2:30	-57	FL370	0:20	26.1N	82.3E	FL362	-52.4	4.8	FL369	-53.9	2.1	2:09				
DEL-BKK	12/21/76	31	2:39	-47	FL330	0:14	26.8N	80.8E	FL327	-41.8	3.4	FL330	-42.3	2.8	2:24				
DEL-FRA	2/13/79	96	3:19	-55	FL351	6:04	38.5N	30.9E	FL348	-48.6	4.4	FL310	-44.5	3.0	2:10	FL350	-50.1	4.6	4:05
DEL-FRA	2/22/79	215	8:41	-54	FL391	7:44	44.3N	20.6E	FL369	-46.5	6.9	FL390	-50.1	.7	1:29	FL350	-43.0	2.2	3:14
DEL-FRA	3/14/79	93	7:45	-64	FL391	5:09	39.9N	33.7E	FL361	-55.3	6.3	FL390	-50.8	2.7	2:15	FL390	-61.3	2.9	2:39
DEL-HKG	1/23/79	114	4:13	-58	FL370	0:57	23.5N	87.1E	FL367	-52.5	3.4	FL350	-53.7	2.4	4:15				
DEL-HKG	2/15/79	49	4:15	-52	FL371	0:09	26.8N	80.9E	FL369	-49.7	1.1	FL369	-53.0	2.6	4:02				
DEL-HKG	3/ 9/79	104	2:06	-48	FL371	0:19	25.8N	82.8E	FL368	-46.3	1.8	FL369	-49.8	.8	4:05				
DEL-HKG	5/23/78	59	5:00	-48	FL370	2:49	8.2N	104.4E	FL370	-46.0	1.1	FL369	-46.6	.7	1:51				
												FL369	-46.0	1.1	5:00				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
DEL-HKG	5/30/79	56	4:34	-46	FL370	0:15	26.3N	81.7E	FL368	-45.3	2.2	FL370	-45.7	.5	4:19				
DEL-HKG	6/16/78	43	3:39	-49	FL370	1:09	9.1N	102.5E	FL367	-47.0	4.1	FL369	-47.6	.9	3:34				
DEL-HKG	6/23/78	14	1:04	-45	FL370	1:04	22.7N	88.6E	FL341	-35.8	6.2								
DEL-HKG	8/ 2/78	61	4:53	-49	FL371	2:09	11.1N	102.5E	FL370	-47.1	1.9	FL370	-47.3	1.3	4:48				
DEL-HKG	9/ 6/78	75	6:12	-50	FL370	3:30	10.7N	102.8E	FL362	-45.9	6.2	FL369	-48.4	.8	5:11				
DEL-HKG	12/26/78	55	4:30	-52	FL359	0:10	27.1N	80.2E	FL367	-48.2	2.2	FL369	-48.5	.8	4:15				
DEL-IST	1/ 4/79	59	5:04	-64	FL350	4:19	39.8N	38.9E	FL318	-49.6	6.3	FL309	-47.2	3.7	4:00				
DEL-KHI	3/12/75	14	1:05	-46	FL350	0:09	28.5N	73.8E	FL343	-45.2	1.9								
DEL-THR	1/24/76	37	3:09	-58	FL350	2:49	33.0N	54.9E	FL347	-55.2	3.8	FL350	-56.1	1.0	2:54				
DEL-THR	3/ 3/76	34	2:54	-55	FL388	1:33	29.3N	63.3E	FL368	-49.1	4.8	FL350	-45.6	.9	1:19	FL390	-53.2	1.9	1:20
DEL-THR	3/20/76	36	3:04	-57	FL350	2:59	34.0N	53.3E	FL346	-50.3	4.1	FL350	-51.1	2.7	2:49				
DEL-THR	3/25/77	35	2:54	-57	FL350	1:24	29.3N	62.8E	FL345	-54.8	4.8	FL350	-56.1	1.1	2:34				
DEL-THR	4/ 1/77	32	2:44	-59	FL351	2:39	34.0N	53.3E	FL348	-51.7	4.0	FL351	-52.5	2.8	2:29				
DEL-THR	4/ 9/77	36	2:59	-53	FL350	2:39	32.9N	55.1E	FL347	-48.0	3.8	FL350	-48.6	2.2	2:45				
DEL-THR	4/20/77	34	2:54	-58	FL351	2:34	32.9N	54.9E	FL349	-52.1	5.2	FL350	-52.7	4.0	2:44				
DEL-THR	5/21/77	34	2:47	-53	FL351	2:42	34.1N	53.1E	FL346	-49.8	3.7	FL350	-50.7	1.4	2:32				
DEL-THR	6/ 5/78	29	2:26	-32	FL311	1:21	29.5N	60.8E	FL308	-30.0	2.1	FL310	-30.5	1.0	2:11				
DEL-THR	7/ 7/78	33	2:29	-40	FL351	0:25	28.4N	70.2E	FL345	-38.2	4.0	FL350	-39.5	.5	2:14				
DEL-THR	7/29/77	30	2:24	-29	FL311	2:24	34.0N	53.2E	FL309	-26.6	1.6	FL310	-26.8	.7	2:19				
DEL-THR	8/14/76	33	2:15	-37	FL352	0:09	28.5N	72.3E	FL347	-35.5	2.9	FL349	-36.1	.4	0:00				
DEL-THR	9/ 7/76	30	2:34	-38	FL349	0:09	28.5N	72.8E	FL347	-36.4	2.4	FL349	-37.0	.7	2:24				
DEL-THR	10/15/78	29	2:37	-52	FL351	2:31	33.7N	53.5E	FL350	-47.0	2.3	FL350	-47.0	1.9	2:26				
DEL-THR	10/22/77	32	2:39	-48	FL351	2:29	33.4N	54.1E	FL350	-45.5	1.7	FL350	-45.8	1.0	2:34				
DEL-THR	10/28/77	32	2:39	-48	FL351	2:39	34.1N	53.0E	FL348	-44.8	2.7	FL350	-45.4	.8	2:29				
DEL-THR	10/29/78	36	2:58	-38	FL280	0:04	28.6N	74.2E	FL280	-37.1	.8	FL280	-37.1	.8	2:53				
DEL-THR	12/31/76	35	2:59	-58	FL351	1:59	30.0N	60.1E	FL348	-53.5	3.3	FL349	-54.0	2.0	2:50				
DEN-LAX	1/ 4/78	19	1:30	-61	FL390	0:15	38.7N	108.0W	FL377	-56.0	4.6	FL389	-57.3	2.1	1:14				
DEN-LAX	1/17/79	19	1:21	-63	FL390	0:21	38.6N	109.0W	FL370	-54.4	5.7								
DEN-LAX	2/13/77	15	1:09	-68	FL390	0:24	37.4N	110.1W	FL376	-63.5	7.3								
DEN-LAX	2/22/78	14	1:09	-61	FL350	0:05	39.4N	107.0W	FL345	-58.8	3.8								
DEN-LAX	3/ 8/78	17	1:15	-69	FL390	0:21	38.6N	109.3W	FL375	-64.1	8.3								
DEN-LAX	3/13/78	15	1:09	-59	FL392	0:15	38.8N	108.5W	FL385	-56.2	3.4								
DEN-LAX	3/13/79	39	1:06	-59	FL389	0:08	39.0N	107.5W	FL383	-53.1	3.3								
DEN-LAX	3/29/79	16	1:08	-55	FL390	1:03	35.1N	115.7W	FL372	-50.3	2.3								
DEN-LAX	4/ 2/78	16	1:17	-59	FL350	0:00	39.4N	107.0W	FL379	-55.0	2.8								
DEN-LAX	4/ 6/78	19	1:30	-64	FL391	0:15	38.9N	107.9W	FL381	-59.7	4.9	FL390	-61.2	1.6	1:10				
DEN-LAX	4/ 9/76	14	1:15	-61	FL389	0:35	37.6N	111.0W	FL377	-56.3	5.3								
DEN-LAX	4/16/78	19	1:22	-57	FL391	0:27	38.1N	109.8W	FL375	-52.4	3.4								
DEN-LAX	4/29/78	17	1:19	-58	FL391	0:14	38.7N	108.0W	FL373	-54.6	5.6								
DEN-LAX	5/ 9/78	17	1:20	-64	FL389	0:10	39.1N	107.8W	FL369	-56.4	8.9								
DEN-LAX	5/11/76	14	1:04	-64	FL390	0:10	38.7N	108.5W	FL382	-59.0	6.6								
DEN-LAX	6/ 3/79	13	1:09	-58	FL390	0:15	38.5N	108.6W	FL366	-51.9	7.1								
DEN-LAX	6/15/78	16	1:15	-57	FL390	0:24	38.1N	110.1W	FL382	-53.8	4.2								
DEN-LAX	6/17/75	19	1:22	-62	FL390	0:11	39.2N	108.1W	FL368	-55.3	9.7								
DEN-LAX	6/28/78	15	1:09	-57	FL390	0:54	36.1N	114.5W	FL373	-51.9	6.3								
DEN-LAX	7/18/77	13	1:05	-55	FL390	0:15	38.6N	108.8W	FL370	-49.5	9.0								
DEN-LAX	7/23/77	15	1:09	-55	FL390	0:34	37.2N	112.0W	FL366	-48.3	9.8								
DEN-LAX	7/29/78	15	1:10	-54	FL390	0:10	38.7N	108.3W	FL376	-50.3	6.1								
DEN-LAX	8/13/77	14	1:10	-53	FL390	0:25	37.8N	110.3W	FL376	-49.4	5.8								
DEN-LAX	9/16/78	16	1:15	-55	FL390	0:24	38.2N	109.5W	FL376	-49.6	6.0								
DEN-LAX	9/24/75	15	1:08	-57	FL391	0:23	38.0N	110.3W	FL370	-52.1	7.2								
DEN-LAX	10/ 5/78	16	1:15	-61	FL390	0:15	38.7N	108.3W	FL372	-55.3	8.4								
DEN-LAX	10/ 6/75	15	1:10	-59	FL390	0:15	38.9N	109.4W	FL372	-54.5	6.8								

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
DEN-LAX	10/17/75	14	1:09	-62	FL390	0:15	38.9N	109.2W	FL367	-54.9	9.9								
DEN-LAX	11/ 4/78	14	1:04	-61	FL389	0:09	38.4N	108.7W	FL377	-57.6	8.1								
DEN-LAX	11/27/77	20	1:21	-66	FL390	0:52	36.6N	112.9W	FL366	-56.0	7.4								
DEN-LAX	11/29/76	16	1:07	-58	FL391	0:50	36.0N	114.2W	FL362	-52.4	5.5								
DEN-LAX	11/30/77	15	1:10	-63	FL390	0:43	36.8N	112.7W	FL379	-56.2	5.8								
DEN-LAX	12/12/77	15	1:10	-56	FL351	0:55	36.2N	113.9W	FL343	-51.3	4.1								
DEN-ORD	1/ 2/78	15	1:09	-51	FL354	0:09	40.4N	101.2W	FL355	-48.9	1.4								
DEN-ORD	2/22/79	15	1:05	-62	FL370	0:26	41.1N	98.5W	FL354	-58.4	4.3								
DEN-ORD	3/ 8/78	18	1:13	-59	FL336	1:13	42.3N	90.4W	FL387	-55.1	2.1								
DEN-ORD	3/13/79	39	1:13	-63	FL366	1:03	42.2N	91.0W	FL363	-53.7	4.3								
DEN-ORD	3/17/79	15	1:14	-67	FL393	1:09	42.1N	90.5W	FL385	-60.4	7.8								
DEN-ORD	3/20/79	12	1:00	-61	FL370	0:38	41.5N	95.4W	FL347	-55.1	4.9								
DEN-ORD	3/22/79	38	1:12	-62	FL370	0:25	40.9N	98.9W	FL365	-59.4	3.6								
DEN-ORD	3/29/78	12	1:13	-62	FL411	0:15	40.8N	100.8W	FL390	-57.7	5.8								
DEN-ORD	4/16/78	13	1:04	-59	FL370	0:53	42.1N	91.4W	FL361	-55.9	3.6								
DEN-ORD	4/29/78	40	1:11	-59	FL395	1:06	42.1N	90.7W	FL403	-53.7	2.7								
DEN-ORD	6/ 5/79	16	1:15	-61	FL411	0:19	40.8N	99.9W	FL385	-55.4	8.4								
DEN-ORD	7/ 1/78	15	1:09	-51	FL370	0:09	40.5N	100.7W	FL363	-46.7	3.9								
DEN-ORD	7/ 6/78	17	1:11	-51	FL370	0:09	40.5N	101.4W	FL357	-46.9	6.1								
DEN-ORD	7/ 8/78	14	1:04	-50	FL369	0:09	40.3N	101.3W	FL359	-44.6	6.0								
DEN-ORD	9/19/77	15	1:09	-57	FL370	0:09	40.6N	101.3W	FL359	-52.7	4.9								
DEN-ORD	10/ 1/78	13	1:09	-61	FL410	0:45	41.6N	94.6W	FL390	-56.6	6.7								
DEN-ORD	10/ 5/78	14	1:05	-56	FL354	1:03	42.1N	90.4W	FL361	-49.6	3.8								
DEN-ORD	11/ 1/78	16	1:15	-57	FL403	0:20	40.8N	99.7W	FL382	-52.6	6.3								
DEN-ORD	11/27/77	14	1:04	-58	FL353	1:04	42.2N	90.3W	FL362	-50.9	3.1								
DEN-ORD	11/30/77	12	1:05	-61	FL410	0:54	42.0N	92.5W	FL363	-53.1	6.5								
DEN-ORD	12/ 6/78	14	1:04	-44	FL370	0:45	41.7N	93.8W	FL354	-41.6	2.7								
DEN-ORD	12/12/77	16	1:09	-53	FL374	0:09	40.6N	101.6W	FL376	-51.1	5.0								
DEN-ORD	12/14/77	15	1:09	-60	FL370	0:15	40.6N	100.4W	FL373	-52.9	4.4								
DEN-ORD	12/20/77	14	1:10	-53	FL290	0:00	40.2N	103.2W	FL356	-44.2	2.8								
DEN-ORD	12/27/77	13	1:00	-53	FL369	0:09	40.6N	100.9W	FL360	-43.3	3.2								
DFW-HNL	3/28/77	85	7:20	-64	FL420	3:35	32.1N	128.5W	FL408	-56.1	5.6	FL390	-50.3	2.9	2:15	FL420	-59.4	2.4	4:39
DFW-HNL	5/ 2/77	80	6:52	-70	FL420	5:18	25.7N	144.5W	FL408	-62.1	6.2	FL390	-61.7	1.7	1:27	FL419	-64.0	5.7	4:10
DFW-HNL	5/ 9/77	88	7:18	-70	FL420	4:23	32.5N	128.3W	FL407	-61.4	6.7	FL390	-55.5	6.5	2:00	FL420	-65.2	3.1	4:28
DFW-HNL	5/16/77	40	7:06	-65	FL401	3:10	33.0N	124.9W	FL394	-61.0	4.1	FL390	-58.1	1.9	2:21	FL400	-63.5	1.2	4:20
DFW-HNL	12/13/76	80	6:49	-63	FL430	4:15	31.3N	137.4W	FL413	-56.6	5.8	FL389	-51.7	3.1	2:04	FL429	-59.9	2.9	4:19
DFW-HNL	12/20/76	85	7:09	-59	FL350	1:45	38.0N	113.4W	FL349	-53.6	3.4	FL349	-53.8	3.1	6:59				
DFW-HNL	12/27/76	97	8:12	-54	FL350	3:55	31.7N	126.4W	FL339	-49.6	5.4	FL309	-41.4	1.9	1:51	FL349	-52.7	1.8	5:42
DFW-JFK	3/30/77	22	1:49	-59	FL410	1:14	37.7N	81.7W	FL404	-35.9	1.6	FL410	-56.1	1.5	1:39				
DFW-JFK	4/27/79	25	1:59	-62	FL410	1:24	38.0N	81.3W	FL400	-56.7	4.4	FL409	-57.7	2.2	1:39				
DFW-JFK	5/ 4/77	24	2:04	-70	FL430	0:54	36.4N	86.9W	FL415	-35.7	4.9	FL429	-67.5	2.4	1:05				
DFW-JFK	5/11/77	25	2:03	-67	FL410	0:14	34.1N	93.6W	FL405	-58.8	6.3	FL409	-59.4	6.0	1:50				
DFW-JFK	12/15/76	25	2:04	-54	FL330	0:44	36.1N	88.7W	FL327	-49.6	4.2	FL329	-50.7	2.4	1:54				
DFW-JFK	12/22/76	24	1:53	-61	FL450	0:10	34.0N	93.7W	FL439	-57.0	2.7	FL450	-57.6	1.7	1:38				
DFW-JFK	12/29/76	21	1:44	-61	FL410	0:10	33.9N	93.5W	FL403	-52.2	4.6	FL410	-52.1	4.5	1:34				
DHA-JFK	2/ 7/79	147	12:26	-64	FL351	3:59	44.4N	20.4E	FL377	-53.9	5.5	FL350	-56.9	5.4	4:38	FL389	-54.7	2.8	5:27
												FL430	-46.7	1.8	1:24				
DHA-JFK	2/14/79	141	11:59	-53	FL390	8:05	58.8N	27.7W	FL379	-51.7	5.0	FL350	-54.7	1.7	4:45	FL389	-53.9	4.5	3:05
												FL410	-46.1	1.7	3:30				
DHA-JFK	2/22/79	147	12:34	-72	FL390	7:45	50.0N	17.4W	FL381	-54.4	8.9	FL350	-47.6	5.7	4:15	FL390	-62.4	7.6	3:40
												FL410	-56.0	4.9	4:04				
DHA-JFK	2/24/79	152	13:09	-69	FL390	6:30	49.7N	4.4W	FL372	-56.8	6.7	FL350	-53.0	6.3	5:00	FL389	-61.4	4.6	1:05
												FL410	-57.9	3.3	3:00	FL369	-61.8	1.7	2:59

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
DHA-JFK	4/19/79	144	12:34		-66	FL390	5:24	50.1N	10.6E	FL374	-54.3	4.7	FL349	-55.3	3.4	4:15	FL390	-54.1	4.5	7:49
DHA-JFK	4/21/79	144	12:20		-69	FL410	11:45	45.7N	66.8W	FL377	-55.7	5.7	FL349	-56.3	2.9	4:44	FL390	-52.0	3.2	4:29
DRW-BKK	3/16/77	53	4:30		-43	FL350	2:04	3.0S	112.1E	FL348	-41.7	2.4	FL409	-61.9	5.6	2:43				
DRW-BKK	3/30/77	52	4:16		-43	FL350	3:33	4.8N	102.8E	FL334	-37.7	5.3	FL349	-42.2	.6	4:15				
DRW-BKK	4/20/77	56	4:39		-42	FL350	2:00	3.6S	113.4E	FL334	-37.9	4.7	FL310	-31.5	.5	1:26	FL350	-41.8	.5	0:00
DRW-BKK	8/18/76	55	4:34		-46	FL350	3:45	6.1N	102.3E	FL335	-40.1	5.2	FL310	-32.5	.5	1:44	FL350	-41.6	.5	2:39
DRW-BKK	10/6/76	56	4:25		-44	FL350	0:08	10.7S	127.5E	FL338	-39.9	5.3	FL310	-34.8	.4	1:19	FL349	-43.4	1.8	2:54
													FL349	-43.4	.7	1:46	FL310	-32.1	.3	1:02
DRW-BKK	11/10/76	57	4:45		-44	FL350	0:10	10.4S	127.0E	FL349	-43.0	2.5	FL350	-43.0	0.0	1:24				
DRW-BNE	2/9/78	33	2:39		-47	FL370	0:19	15.9S	133.9E	FL366	-45.3	4.2	FL350	-43.5	.5	4:29				
DRW-SIN	2/9/78	35	2:59		-42	FL351	1:29	5.3S	116.7E	FL333	-36.8	5.8	FL369	-46.3	.5	2:30				
DRW-SIN	8/30/77	34	3:00		-34	FL310	1:00	7.4S	120.9E	FL309	-32.8	1.6	FL310	-30.7	.5	1:10	FL350	-41.9	.3	1:33
DRW-SYD	3/18/77	37	3:01		-48	FL370	0:20	16.3S	134.4E	FL366	-45.2	2.4	FL309	-33.0	.5	2:49				
DRW-SYD	4/1/77	36	2:55		-52	FL370	2:39	30.8S	148.7E	FL367	-48.8	3.6	FL369	-45.7	.8	2:45				
DRW-SYD	4/22/77	32	2:45		-51	FL381	0:15	15.4S	133.4E	FL374	-48.9	5.5	FL370	-49.6	1.4	2:40				
DRW-SYD	8/20/76	32	2:39		-51	FL370	2:30	31.5S	148.9E	FL350	-44.9	5.0	FL380	-50.3	.8	2:25				
DRW-SYD	10/8/76	31	2:51		-49	FL370	1:00	20.4S	139.1E	FL357	-44.4	4.7	FL370	-47.5	.9	0:00				
DRW-SYD	11/12/76	35	2:49		-57	FL370	2:39	31.4S	149.0E	FL352	-46.5	6.9	FL370	-51.8	2.2	1:29				
EZE-GIG	8/14/78	20	1:45		-57	FL370	0:15	33.1S	54.5W	FL360	-49.0	5.3	FL369	-50.0	3.9	1:25				
EZE-JFK	5/6/79	116	9:39		-65	FL410	9:15	36.2N	71.2W	FL387	-55.6	5.1	FL370	-53.2	1.8	2:29	FL389	-54.7	.6	2:50
EZE-JFK	6/17/79	343	9:05		-58	FL391	8:20	32.5N	70.3W	FL380	-53.8	4.3	FL409	-61.4	1.5	3:04				
EZE-JFK	9/24/78	111	9:02		-60	FL390	7:37	28.2N	68.9W	FL369	-52.6	6.6	FL330	-43.8	2.3	2:29	FL350	-45.9	.7	1:30
EZE-JFK	11/12/78	108	9:05		-63	FL390	8:55	38.1N	71.8W	FL361	-50.6	7.5	FL390	-56.0	.7	2:36	FL390	-56.4	1.0	1:22
FAI-HND	11/16/77	74	6:29		-63	FL430	5:24	42.0N	147.1E	FL411	-54.4	4.6	FL329	-44.3	1.6	2:13	FL389	-57.1	1.4	5:48
FAI-HNL	10/30/76	86	5:31		-61	FL330	0:09	62.5N	148.5W	FL343	-51.2	4.6	FL331	-43.8	4.4	2:39	FL351	-45.6	.6	1:55
FAI-SEA	4/17/78	26	2:25		-50	FL390	1:30	55.0N	129.9W	FL385	-47.9	1.2	FL390	-58.5	1.8	3:59	FL430	-60.2	3.0	1:59
FAI-SEA	5/11/77	29	2:25		-48	FL284	0:00	63.9N	145.4W	FL377	-44.7	1.8	FL409	-51.6	1.8	2:54	FL350	-50.5	3.9	3:06
FAI-SEA	5/18/78	26	2:14		-61	FL370	1:34	53.3N	127.9W	FL368	-52.7	6.6	FL329	-52.1	5.4	1:58				
FAI-SEA	6/2/78	29	2:30		-61	FL369	1:49	52.9N	128.6W	FL367	-57.6	4.7	FL389	-47.8	1.2	2:10				
FAI-SEA	6/3/77	30	2:25		-54	FL371	0:25	61.6N	140.4W	FL379	-48.5	3.0	FL390	-45.6	.9	1:19				
FAI-SEA	6/6/77	30	2:30		-57	FL370	1:58	52.2N	126.7W	FL368	-49.6	5.0	FL369	-52.9	6.7	2:04				
FAI-SEA	6/21/77	29	2:24		-53	FL343	2:24	48.6N	123.3W	FL377	-46.3	2.4	FL369	-58.4	3.7	2:19				
FAI-SEA	6/21/78	26	2:04		-58	FL370	2:04	49.0N	123.9W	FL365	-50.0	4.3	FL391	-46.4	1.4	1:19				
FAI-SEA	7/5/78	31	2:29		-58	FL369	0:15	62.8N	142.6W	FL366	-55.5	3.6	FL370	-50.3	3.8	1:55				
FAI-SEA	7/7/77	30	2:23		-59	FL371	2:08	50.2N	124.9W	FL364	-52.6	4.6	FL369	-56.3	1.0	2:15				
FAI-SEA	7/18/77	29	2:19		-52	FL307	0:00	63.8N	145.4W	FL383	-46.3	2.7	FL370	-53.3	3.4	2:09				
FAI-SEA	11/15/76	29	2:19		-47	FL306	0:00	64.0N	145.9W	FL366	-39.3	3.5	FL390	-46.0	2.4	2:00				
FAI-SEA	12/6/76	25	2:07		-65	FL375	2:07	49.0N	123.7W	FL375	-55.8	4.9	FL369	-38.8	3.1	2:04				
FAI-SEA	12/13/77	27	2:18		-55	FL370	0:48	59.0N	135.5W	FL366	-52.1	1.9	FL370	-52.2	1.9	2:05				
FCO-ATH	11/5/76	15	1:06		-62	FL370	0:30	40.6N	17.2E	FL360	-58.7	5.7								
FCO-BAH	10/14/77	45	4:00		-56	FL370	3:00	31.3N	40.0E	FL341	-50.4	3.4	FL330	-49.8	2.2	2:34				
FCO-IST	1/6/79	15	1:09		-57	FL371	1:00	42.4N	25.0E	FL354	-53.3	4.5	FL329	-57.9	1.9	1:09				
FCO-IST	2/24/79	17	1:20		-61	FL330	0:10	43.2N	15.8E	FL324	-57.1	3.0								
FCO-IST	3/16/79	14	1:04		-54	FL330	0:15	44.1N	19.2E	FL324	-49.2	3.2								
FCO-IST	7/30/78	17	1:19		-47	FL350	0:30	44.0N	18.9E	FL335	-40.8	5.1								
FCO-IST	8/18/78	13	1:04		-63	FL370	0:19	44.2N	19.6E	FL357	-57.7	6.8								
FCO-IST	11/22/78	13	1:00		-56	FL330	0:45	42.6N	24.1E	FL326	-54.3	2.7								
FCO-IST	11/25/78	16	1:25		-63	FL370	1:04	42.6N	24.4E	FL342	-57.1	6.8								
FCO-IST	11/28/78	13	1:00		-59	FL343	0:09	44.1N	19.3E	FL351	-57.1	1.1								

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
FCO-IST	12/17/78	14	1:04	-53	FL331	0:30	44.0N	20.9E	FL313	-49.2	4.3								
FCO-IST	12/23/78	16	1:15	-54	FL328	0:25	44.2N	18.8E	FL296	-49.7	2.7								
FCO-JFK	1/28/76	95	7:51	-62	FL330	1:30	47.7N	5.3W	FL335	-56.4	3.2	FL309	-56.1	1.0	1:04	FL330	-55.4	2.7	4:41
FCO-JFK	2/25/79	139	7:57	-63	FL350	3:05	48.7N	23.7W	FL356	-58.8	2.7	FL370	-60.9	.9	1:10	FL350	-58.5	2.1	2:39
FCO-JFK	3/10/78	100	8:01	-66	FL390	7:06	44.6N	64.6W	FL358	-56.7	4.9	FL309	-54.2	1.8	2:49	FL370	-60.2	1.0	2:07
FCO-JFK	3/17/79	85	7:01	-56	FL340	4:51	51.4N	48.8W	FL327	-50.5	3.8	FL370	-60.2	1.0	2:07	FL330	-53.2	.6	1:05
FCO-JFK	4/ 2/77	94	7:33	-61	FL371	7:23	42.1N	69.5W	FL339	-52.5	5.1	FL390	-62.9	2.4	2:02	FL350	-54.7	3.3	4:19
FCO-JFK	4/12/76	91	7:44	-61	FL350	1:09	45.8N	2.9W	FL363	-54.5	4.9	FL310	-47.4	2.9	1:59	FL340	-52.4	2.4	2:46
FCO-JFK	5/17/77	89	7:49	-63	FL390	7:44	42.8N	70.7W	FL367	-51.3	6.9	FL330	-51.4	4.1	1:50	FL340	-54.8	4.1	3:09
FCO-JFK	5/29/79	92	7:34	-57	FL350	6:44	45.7N	66.1W	FL370	-53.3	5.4	FL309	-50.4	2.1	1:56	FL370	-53.3	5.4	1:42
FCO-JFK	6/ 9/78	94	7:45	-56	FL391	6:45	44.6N	63.6W	FL350	-56.3	2.5	FL350	-46.8	3.0	1:34	FL369	-58.1	.8	3:04
FCO-JFK	6/25/78	91	7:18	-61	FL371	6:48	43.5N	66.7W	FL390	-56.3	6.4	FL349	-52.1	2.1	1:25	FL370	-49.6	6.3	3:45
FCO-JFK	7/31/78	101	8:19	-58	FL390	7:39	45.5N	68.7W	FL390	-48.2	.8	FL330	-48.2	4.2	3:54	FL350	-55.1	1.2	1:45
FCO-JFK	8/15/76	73	5:30	-57	FL390	5:02	44.4N	58.1W	FL335	-45.4	4.4	FL310	-47.4	5.1	1:30	FL370	-55.3	4.0	1:50
FCO-JFK	8/19/78	86	7:14	-59	FL350	4:30	55.2N	42.7W	FL344	-51.0	5.2	FL310	-44.9	3.3	5:08	FL370	-55.3	4.0	1:50
FCO-JFK	9/ 1/78	93	7:45	-62	FL353	3:17	49.1N	27.6W	FL339	-56.1	3.1	FL310	-43.6	.5	1:39	FL350	-52.6	1.6	2:34
FCO-JFK	9/ 6/77	102	8:44	-57	FL391	8:34	43.3N	70.7W	FL330	-49.2	5.2	FL370	-44.0	5.1	1:49	FL390	-55.7	1.6	1:24
FCO-JFK	9/ 7/77	104	8:44	-58	FL350	5:24	59.2N	44.5W	FL336	-49.4	5.4	FL309	-41.7	.5	1:06	FL330	-44.1	1.7	2:49
FCO-JFK	9/ 8/77	94	7:57	-54	FL371	5:45	40.8N	53.1W	FL350	-48.7	3.4	FL350	-48.2	.8	1:06	FL350	-50.3	4.9	3:21
FCO-JFK	9/20/76	90	7:38	-55	FL370	1:40	50.1N	5.6W	FL363	-47.8	5.7	FL310	-46.7	.7	1:48	FL370	-56.9	1.8	1:43
FCO-JFK	10/24/76	90	7:35	-57	FL350	7:20	43.9N	70.3W	FL329	-47.6	3.9	FL311	-52.8	.4	1:11	FL331	-56.8	.4	1:39
FCO-JFK	10/29/76	105	7:49	-58	FL389	6:50	46.3N	63.4W	FL323	-46.2	5.2	FL352	-57.5	2.0	4:27	FL390	-52.3	3.2	1:54
FCO-JFK	11/23/78	93	8:04	-67	FL371	4:45	45.9N	41.5W	FL345	-58.6	6.5	FL310	-48.3	4.9	6:19	FL350	-53.7	3.4	2:35
FCO-JFK	11/26/78	92	7:47	-60	FL370	5:01	47.3N	44.6W	FL346	-53.1	4.5	FL310	-47.6	4.8	3:45	FL370	-52.2	1.0	2:07
FCO-JFK	11/29/78	95	8:15	-62	FL310	0:19	44.9N	3.4E	FL335	-54.1	4.6	FL370	-48.4	4.7	2:00	FL329	-45.6	2.4	3:45
FCO-JFK	12/18/78	87	7:34	-63	FL372	5:39	46.8N	52.2W	FL345	-54.3	5.5	FL349	-52.1	3.6	1:45	FL309	-44.0	2.9	5:30
FCO-JFK	12/24/79	37	7:07	-54	FL310	5:39	52.1N	56.9W	FL306	-47.8	4.0	FL329	-54.0	.3	1:29	FL330	-55.8	1.3	1:15
FCO-LHR	9/22/76	15	1:15	-55	FL350	0:25	45.2N	8.1E	FL329	-49.7	5.5	FL370	-64.9	2.1	3:30	FL310	-51.1	1.3	1:10
FCO-SNE	1/27/76	25	2:00	-67	FL382	2:00	52.2N	6.0W	FL384	-55.3	5.3	FL369	-52.0	5.5	2:49	FL309	-54.1	4.3	1:20
FCO-YOK	1/ 7/79	73	6:20	-64	FL364	6:15	51.2N	55.3W	FL331	-52.8	3.6	FL331	-55.3	4.2	1:49	FL371	-50.5	7.9	1:54
FRA-ATH	12/21/77	25	1:40	-64	FL371	0:15	47.5N	12.8E	FL351	-58.2	6.1	FL309	-48.6	3.3	6:29	FL389	-55.5	4.7	1:40
FRA-BAG	1/31/77	51	4:13	-54	FL290	0:20	46.8N	14.4E	FL290	-45.4	5.3	FL309	-51.2	1.3	2:45	FL370	-61.4	2.3	1:20
FRA-BAG	2/14/77	50	4:45	-62	FL330	0:45	45.4N	19.0E	FL352	-54.9	4.3	FL290	-45.5	5.1	4:00	FL329	-56.4	3.3	1:54
FRA-CAH	3/28/77	62	5:01	-60	FL370	1:39	41.4N	27.7E	FL357	-55.2	3.4	FL330	-57.3	.8	1:15	FL350	-54.0	2.3	2:20
FRA-CAH	5/21/77	51	4:20	-51	FL331	3:15	34.3N	43.6E	FL302	-42.2	4.0	FL290	-40.1	2.2	3:06	FL370	-55.0	3.3	3:07
FRA-CAH	5/27/77	45	3:45	-51	FL331	1:35	39.7N	34.3E	FL315	-45.7	3.7	FL289	-42.9	1.6	1:15	FL330	-47.8	2.9	2:09
FRA-CAH	11/ 8/76	53	4:33	-54	FL330	0:15	47.3N	13.4E	FL327	-49.7	2.8	FL330	-50.2	1.6	4:09				











APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
GUM-HNL	7/16/77	68	5:49	-55	FL370	4:55	21.0N	168.0W	FL352	-46.5	6.9	FL330	-40.0	1.9	2:05	FL370	-51.7	2.1	3:15
GUM-HNL	7/17/78	72	5:59	-55	FL370	4:19	20.5N	175.2W	FL342	-44.3	7.7	FL330	-40.5	2.8	3:19	FL370	-53.7	.9	1:54
GUM-HNL	7/21/78	76	6:15	-54	FL371	4:04	20.2N	178.1W	FL343	-44.0	6.5	FL330	-40.1	1.3	3:45	FL370	-52.3	1.3	2:04
GUM-HNL	7/23/78	83	6:11	-53	FL370	3:56	19.2N	178.7W	FL347	-44.3	6.4	FL329	-38.9	1.5	2:32	FL350	-49.1	.7	1:04
GUM-HNL	8/12/78	73	5:52	-54	FL371	4:17	20.2N	174.3W	FL342	-43.6	8.4	FL370	-49.5	2.5	2:09	FL350	-46.2	.9	1:57
GUM-HNL	8/23/78	73	6:06	-53	FL351	4:29	21.9N	174.8W	FL336	-46.5	4.5	FL310	-32.8	1.0	1:39	FL351	-51.9	.8	1:52
GUM-HNL	8/25/77	70	6:00	-53	FL370	4:40	19.8N	172.2W	FL347	-44.4	6.7	FL370	-53.1	.5	1:39	FL370	-51.4	.6	2:34
GUM-HNL	10/25/77	64	6:01	-53	FL370	3:49	20.4N	179.1W	FL344	-43.0	7.1	FL330	-39.3	1.0	3:00	FL370	-51.7	.9	2:20
GUM-HNL	11/13/76	70	5:55	-47	FL370	5:05	20.4N	167.2W	FL353	-41.9	4.8	FL329	-36.5	.7	1:19	FL350	-40.8	1.2	1:00
GUM-HNL	12/4/76	67	5:44	-56	FL370	4:39	24.8N	169.4W	FL353	-47.9	8.3	FL369	-45.7	1.3	3:04	FL370	-54.6	.9	3:00
GUM-HNL	12/11/76	71	5:54	-51	FL370	3:29	29.8N	177.6E	FL354	-45.4	4.2	FL330	-38.6	1.1	1:24	FL350	-45.2	.7	1:34
GUM-HNL	12/29/78	72	5:52	-47	FL370	2:54	19.3N	172.3E	FL329	-37.4	4.3	FL330	-39.5	.5	1:04				
GUM-HNL	12/31/78	72	5:59	-48	FL370	0:15	16.4N	148.1E	FL367	-45.6	3.6	FL370	-48.8	1.0	2:39				
GUM-MNL	2/3/76	29	2:19	-57	FL390	1:05	14.2N	133.4E	FL382	-54.3	5.0	FL330	-36.5	.6	2:34				
GUM-MNL	3/18/77	28	2:20	-55	FL391	2:00	14.6N	125.3E	FL373	-49.1	4.8	FL369	-46.4	.8	5:39				
GUM-MNL	3/28/76	28	2:20	-45	FL350	0:10	13.8N	140.8E	FL348	-43.4	2.7	FL390	-56.5	.5	1:44				
GUM-MNL	3/30/79	30	2:24	-42	FL350	0:05	13.7N	142.1E	FL348	-41.3	2.5	FL370	-48.3	.5	1:20				
GUM-MNL	4/7/78	25	1:59	-43	FL350	0:45	14.2N	134.0E	FL350	-42.3	.5	FL349	-44.0	.4	2:09				
GUM-MNL	4/8/79	30	2:24	-42	FL351	1:39	14.4N	128.8E	FL347	-39.9	3.6	FL350	-42.0	0.0	2:15				
GUM-MNL	4/15/77	29	2:20	-43	FL350	0:25	14.0N	138.8E	FL348	-42.0	2.4	FL349	-42.3	.5	1:59				
GUM-MNL	4/19/79	27	2:10	-43	FL351	0:15	13.9N	139.5E	FL346	-40.6	3.9	FL350	-41.0	.8	2:10				
GUM-MNL	5/17/75	29	2:19	-48	FL350	1:19	14.2N	131.8E	FL346	-45.8	3.9	FL350	-42.6	.5	2:09				
GUM-MNL	5/17/79	28	2:15	-31	FL311	0:20	14.0N	139.3E	FL308	-30.0	2.2	FL350	-41.8	.7	1:55				
GUM-MNL	5/28/75	30	2:15	-47	FL350	0:09	13.7N	141.5E	FL345	-44.4	3.7	FL310	-46.9	.4	2:04				
GUM-MNL	6/18/77	29	2:19	-45	FL350	1:15	14.3N	131.5E	FL343	-42.1	5.4	FL310	-30.6	.6	2:04				
GUM-MNL	7/10/77	26	2:09	-45	FL351	0:24	14.0N	138.3E	FL345	-41.9	4.4	FL349	-45.4	.7	2:00				
GUM-MNL	7/12/78	27	2:09	-46	FL350	0:20	13.9N	139.2E	FL347	-44.3	3.5	FL350	-43.9	.5	1:59				
GUM-MNL	7/15/77	27	2:15	-44	FL350	0:19	13.9N	139.2E	FL346	-42.1	4.3	FL350	-43.5	.6	1:49				
GUM-MNL	7/16/78	36	2:31	-44	FL352	0:45	13.8N	136.7E	FL346	-42.1	4.3	FL349	-45.2	.6	2:00				
GUM-MNL	8/12/78	30	2:24	-43	FL350	0:45	14.3N	136.3E	FL346	-41.9	3.9	FL350	-43.3	.5	2:00				
GUM-MNL	11/8/76	27	2:15	-42	FL349	0:10	13.8N	140.5E	FL344	-40.5	5.1	FL350	-43.0	.5	2:11				
GUM-MNL	11/12/76	27	2:19	-41	FL350	0:09	13.8N	140.8E	FL347	-40.2	2.4	FL350	-42.1	.4	2:09				
GUM-MNL	12/3/76	30	2:17	-44	FL350	0:45	14.1N	135.7E	FL347	-39.7	2.7	FL349	-40.7	.9	2:04				
GUM-MNL	12/10/76	26	2:05	-35	FL310	0:09	13.9N	139.9E	FL344	-40.7	4.8	FL349	-40.4	.5	2:09				
GUM-MNL	12/28/78	29	2:20	-38	FL330	1:35	14.4N	128.7E	FL308	-32.6	2.0	FL350	-42.4	.7	1:57				
GUM-NRT	4/21/79	27	2:15	-52	FL350	2:00	31.9N	140.5E	FL327	-36.7	2.4	FL309	-33.0	.6	1:55				
GUM-NRT	5/10/79	30	2:13	-57	FL390	2:13	34.2N	140.0E	FL346	-44.4	4.8	FL330	-37.3	.5	2:09				
GUM-NRT	5/15/79	32	2:34	-55	FL391	1:59	29.5N	141.1E	FL386	-51.7	4.7	FL349	-45.3	3.6	2:00				
GUM-NRT	12/31/78	30	2:24	-53	FL390	0:39	20.6N	143.1E	FL382	-51.6	7.1	FL390	-52.9	1.3	0:00				
GUM-OKA	4/15/78	24	2:00	-56	FL390	2:00	24.9N	129.7E	FL383	-50.2	6.5	FL390	-53.8	.8	2:19				
GUM-OKA	5/31/77	27	2:20	-54	FL391	0:45	18.3N	138.7E	FL389	-52.8	1.5	FL390	-52.2	.8	2:09				
GUM-OKA	7/20/78	26	2:04	-55	FL390	0:15	15.6N	142.2E	FL379	-50.4	8.1	FL389	-53.0	1.3	1:55				
GUM-OKA	7/22/78	29	2:06	-55	FL389	0:09	15.7N	142.0E	FL383	-50.9	6.3	FL390	-53.2	.6	2:00				
GUM-OKA	8/22/78	27	2:00	-63	FL390	1:10	20.7N	135.5E	FL386	-52.7	4.1	FL390	-52.6	2.0	1:49				
HKG-BKK	1/23/76	39	2:59	-58	FL390	1:24	11.4N	109.7E	FL381	-58.1	7.6	FL389	-53.7	.7	1:56				
HKG-BKK	2/23/77	28	2:43	-46	FL350	1:11	12.5N	110.1E	FL382	-55.5	6.5	FL390	-60.9	1.2	1:45				
HKG-BKK	3/12/75	21	1:39	-46	FL349	0:10	19.1N	113.6E	FL342	-43.0	4.9	FL389	-57.5	.6	2:35				
HKG-BKK	3/19/76	31	2:39	-46	FL352	1:15	10.9N	109.5E	FL344	-43.8	4.6	FL349	-45.2	.4	2:29				
HKG-BKK	3/24/77	34	2:49	-47	FL351	0:09	19.8N	113.2E	FL347	-43.7	4.4	FL351	-45.0	.5	2:24				
									FL348	-44.4	2.5	FL351	-44.8	1.0	2:39				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	NO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HKG-BKK	3/31/77	32	2:44	-48	FL351	0:10	18.9N	112.7E	FL348	-44.3	3.3	FL350	-44.9	1.2	2:30				
HKG-BKK	4/ 8/77	33	2:45	-45	FL351	0:10	19.0N	112.8E	FL349	-42.6	1.8	FL350	-43.0	.8	2:29				
HKG-BKK	4/10/79	21	1:45	-64	FL430	1:19	15.4N	105.3E	FL422	-51.3	2.5	FL430	-63.2	.6	1:20				
HKG-BKK	4/19/77	33	2:45	-44	FL351	0:15	19.2N	112.8E	FL347	-42.5	3.2	FL350	-43.4	.5	2:31				
HKG-BKK	5/20/78	32	2:35	-42	FL351	1:49	8.0N	105.0E	FL321	-33.1	5.7	FL310	-30.3	1.0	1:34				
HKG-BKK	6/ 5/79	20	1:28	-64	FL431	1:00	15.7N	105.9E	FL421	-60.4	7.4	FL430	-63.1	.6	1:14				
HKG-BKK	6/23/77	32	2:34	-55	FL391	1:54	8.0N	104.5E	FL369	-46.9	7.3	FL390	-53.6	.8	1:15				
HKG-BKK	7/28/77	36	2:27	-34	FL310	1:24	9.2N	107.7E	FL310	-32.0	1.6	FL310	-32.2	1.1	2:22				
HKG-BKK	8/13/76	32	1:33	-54	FL390	0:52	12.9N	110.3E	FL382	-51.0	6.5	FL390	-53.4	.5	1:24				
HKG-BKK	8/15/78	35	2:45	-55	FL390	1:40	9.0N	107.5E	FL385	-52.3	5.5	FL390	-53.7	1.2	2:30				
HKG-BKK	8/27/77	30	2:30	-44	FL350	1:00	12.1N	109.9E	FL340	-40.8	5.3	FL350	-43.9	.3	1:45				
HKG-BKK	9/ 6/76	35	2:54	-53	FL390	0:25	18.4N	112.5E	FL378	-49.4	8.5	FL389	-52.5	.5	2:30				
HKG-BKK	9/12/78	33	2:44	-56	FL390	1:44	8.5N	107.0E	FL387	-53.6	4.7	FL390	-54.7	1.1	2:34				
HKG-BKK	10/ 8/77	31	2:35	-34	FL310	0:05	19.6N	113.0E	FL309	-32.8	.9	FL310	-33.0	.4	2:24				
HKG-BKK	10/14/77	31	2:34	-55	FL391	1:30	8.9N	107.4E	FL366	-48.4	5.6	FL350	-44.3	.9	1:09				
HKG-BKK	10/21/77	34	2:44	-45	FL350	0:19	18.3N	112.5E	FL347	-43.1	3.7	FL350	-43.9	.4	2:34				
HKG-BKK	10/27/77	26	2:34	-55	FL390	1:54	8.0N	104.4E	FL361	-46.3	6.3	FL350	-43.3	.5	1:20				
HKG-BKK	12/30/76	34	2:45	-45	FL350	0:09	19.3N	112.9E	FL346	-43.4	3.4	FL349	-44.4	.5	2:30				
HKG-DEL	1/ 4/79	60	4:59	-51	FL350	4:54	27.6N	79.3E	FL334	-41.7	7.2	FL310	-33.0	.6	1:44	FL350	-47.4	1.6	3:00
HKG-DEL	2/13/79	58	5:12	-53	FL350	5:07	27.8N	78.9E	FL347	-43.6	3.7	FL349	-44.3	2.7	4:42				
HKG-DEL	2/22/79	61	4:59	-44	FL351	2:14	17.1N	96.3E	FL332	-38.0	5.4	FL310	-32.2	.4	1:54	FL350	-42.7	1.0	2:45
HKG-DEL	3/14/79	62	5:04	-51	FL351	4:44	25.8N	80.8E	FL329	-39.1	7.5	FL310	-32.5	1.0	2:30	FL350	-45.6	3.3	2:20
HKG-DEL	4/23/79	59	4:49	-57	FL391	4:39	27.2N	79.9E	FL371	-48.1	6.8	FL350	-41.8	.3	1:55	FL390	-53.9	1.5	2:34
HKG-DEL	5/11/79	57	4:33	-32	FL311	1:17	16.6N	104.1E	FL310	-28.5	1.8	FL310	-28.5	1.8	4:23				
HKG-DEL	6/ 4/78	73	5:47	-42	FL350	2:12	9.0N	102.5E	FL335	-35.8	4.1	FL310	-30.7	.7	1:52	FL350	-39.0	1.0	3:35
HKG-DEL	6/ 4/79	55	4:30	-40	FL350	0:15	18.6N	111.4E	FL348	-38.5	2.7	FL350	-39.1	.7	4:09				
HKG-DEL	6/23/78	75	5:45	-43	FL352	2:38	11.5N	99.2E	FL334	-35.8	4.2	FL311	-32.7	1.3	2:14	FL352	-38.6	2.2	3:00
HKG-DEL	7/ 7/78	75	5:40	-45	FL349	2:00	9.3N	103.4E	FL329	-37.1	7.6	FL280	-25.8	.4	1:49	FL350	-42.1	1.5	3:34
HKG-DEL	10/15/78	71	5:54	-45	FL350	5:34	25.4N	81.5E	FL332	-38.8	5.6	FL309	-33.2	.6	2:19	FL349	-43.5	.7	3:09
HKG-DEL	10/29/78	56	4:32	-48	FL350	4:32	27.7N	79.0E	FL335	-40.4	6.2	FL310	-32.8	.5	1:19	FL350	-45.0	1.0	2:48
HKG-GUM	5/11/75	36	3:14	-52	FL370	2:24	17.2N	137.0E	FL365	-49.1	4.9	FL369	-50.5	1.2	2:59				
HKG-HND	1/ 8/77	28	2:19	-50	FL370	1:00	26.4N	125.2E	FL359	-47.0	5.3	FL369	-49.6	.6	1:45				
HKG-HND	3/19/75	34	2:30	-56	FL330	2:15	33.6N	136.3E	FL303	-40.8	9.3	FL290	-31.5	.8	1:04				
HKG-HND	3/25/76	30	2:34	-63	FL371	2:04	32.8N	133.1E	FL366	-52.8	6.7	FL371	-54.0	5.7	2:19				
HKG-HND	3/27/75	31	2:29	-44	FL290	2:24	34.0N	137.4E	FL290	-35.6	5.2	FL290	-36.0	4.9	2:24				
HKG-HND	3/30/77	31	2:21	-58	FL370	2:16	34.0N	137.3E	FL342	-47.5	6.3	FL331	-43.8	1.3	1:34				
HKG-HND	4/21/76	27	2:34	-53	FL371	2:29	34.1N	137.9E	FL364	-49.6	5.4	FL370	-51.2	.7	2:14				
HKG-HND	6/27/77	31	2:46	-48	FL371	2:36	34.1N	137.7E	FL367	-45.7	3.1	FL370	-46.5	.6	2:31				
HKG-HND	8/19/76	32	2:46	-48	FL369	1:06	27.1N	124.1E	FL352	-42.3	4.3	FL368	-45.2	1.0	1:34				
HKG-HND	9/12/77	36	2:59	-48	FL370	1:14	27.9N	125.3E	FL356	-43.0	5.9	FL370	-46.8	.6	2:04				
HKG-HND	10/13/77	27	2:39	-51	FL371	0:19	22.8N	118.6E	FL367	-47.4	3.1	FL370	-48.0	1.4	2:29				
HKG-HND	10/16/77	31	2:51	-45	FL331	2:23	33.2N	134.7E	FL329	-42.0	2.8	FL331	-42.7	1.7	2:39				
HKG-HND	10/18/76	30	2:29	-46	FL330	2:04	33.1N	134.4E	FL326	-41.8	4.3	FL329	-42.9	2.3	2:14				
HKG-HND	10/20/77	27	2:24	-38	FL330	0:05	22.3N	117.9E	FL330	-35.4	1.4	FL330	-35.3	1.4	2:19				
HKG-HND	12/22/76	30	2:29	-56	FL330	2:04	33.2N	134.7E	FL330	-47.7	7.2	FL330	-48.1	6.9	2:24				
HKG-LAX	8/22/78	141	11:54	-69	FL410	9:20	45.8N	145.4W	FL372	-49.7	11.1	FL330	-37.6	1.2	2:44	FL349	-40.8	.8	1:04
												FL370	-45.2	1.3	1:55	FL390	-56.5	4.9	2:10
												FL410	-63.3	3.8	3:21				
HKG-LAX	9/19/78	136	11:37	-67	FL410	9:57	43.4N	134.6W	FL379	-52.9	9.3	FL330	-39.1	.7	1:24	FL370	-50.8	1.4	3:00
												FL390	-56.1	4.5	2:22	FL410	-61.1	3.9	3:49
HKG-LAX	11/29/78	127	10:42	-67	FL430	9:39	41.4N	128.7W	FL391	-52.5	6.6	FL369	-47.6	1.5	3:14	FL389	-51.8	1.9	2:49
												FL410	-54.9	6.1	2:54				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HKG-LAX	12/ 5/78	132	11:04		-67	FL390	4:59	45.5N	167.9E	FL388	-55.2	5.2	FL369	-52.4	1.2	4:09	FL390	-59.3	5.2	2:09
HKG-LAX	12/12/78	126	10:43		-69	FL390	7:53	44.6N	148.3W	FL379	-56.8	8.1	FL410	-56.9	3.7	4:04				
HKG-LAX	12/26/78	133	10:59		-58	FL370	2:49	30.9N	144.1E	FL387	-50.3	4.3	FL369	-51.2	2.1	4:34	FL390	-62.8	4.8	5:33
HKG-NRT	1/24/79	75	2:31		-52	FL331	2:31	34.1N	139.4E	FL330	-46.6	3.3	FL370	-50.8	3.7	4:39	FL390	-47.6	1.8	1:40
HKG-NRT	2/17/79	29	2:20		-48	FL370	0:30	24.9N	121.2E	FL362	-45.3	5.1	FL410	-51.8	3.4	4:04				
HKG-NRT	5/24/78	26	2:04		-56	FL367	2:04	34.2N	139.6E	FL372	-52.5	2.5	FL330	-47.0	2.5	2:24				
HKG-NRT	5/25/79	33	2:39		-47	FL370	0:19	23.1N	119.0E	FL367	-44.9	2.8	FL369	-47.1	1.9	1:59				
HKG-NRT	5/31/79	36	2:54		-55	FL370	2:39	33.8N	137.2E	FL364	-47.1	6.9	FL372	-50.8	2.1	1:04				
HKG-NRT	8/ 3/78	38	3:04		-46	FL370	0:15	22.5N	117.9E	FL364	-42.3	5.0	FL369	-45.5	1.1	2:29				
HKG-NRT	9/ 7/78	36	2:54		-39	FL330	0:45	25.7N	122.2E	FL328	-36.9	2.3	FL370	-49.0	5.0	2:30				
HKG-NRT	9/15/78	33	2:50		-41	FL330	0:58	25.8N	123.8E	FL328	-38.3	2.4	FL369	-43.7	1.2	2:44				
HKG-NRT	11/ 3/78	31	2:29		-47	FL330	1:39	31.3N	130.0E	FL328	-41.6	3.6	FL330	-37.3	1.0	2:44				
HKG-NRT	12/ 8/78	30	2:30		-57	FL370	1:45	32.2N	131.8E	FL355	-51.6	6.9	FL330	-38.8	1.0	2:40				
HKG-NRT	12/27/78	30	2:30		-47	FL370	0:49	26.4N	123.2E	FL357	-42.9	4.0	FL330	-42.3	2.7	2:14				
HKG-SFO	1/20/78	120	10:08		-62	FL353	10:08	37.4N	123.6W	FL380	-50.6	5.1	FL370	-55.9	2.7	1:40				
HKG-SFO	1/22/78	121	10:11		-69	FL391	8:16	40.1N	144.9W	FL371	-50.3	11.0	FL370	-45.2	1.4	1:34				
HKG-SFO	1/24/78	119	10:09		-68	FL410	9:49	38.3N	127.6W	FL381	-47.7	8.5	FL369	-47.7	1.1	4:04	FL390	-53.4	3.5	5:30
HKG-SFO	1/27/78	118	10:14		-60	FL410	7:49	37.0N	150.5W	FL383	-48.9	5.0	FL330	-37.1	1.4	2:24	FL369	-48.5	3.8	2:19
HKG-SFO	1/29/78	120	10:05		-62	FL383	10:05	37.5N	124.1W	FL373	-45.6	7.7	FL390	-57.5	9.1	5:06				
HKG-SFO	1/31/78	117	10:03		-59	FL410	9:43	37.9N	128.0W	FL387	-47.3	4.5	FL369	-46.9	1.4	3:49	FL390	-46.2	1.0	1:30
HKG-SFO	2/ 3/78	117	9:51		-70	FL410	9:21	38.0N	129.8W	FL381	-47.5	7.6	FL410	-53.5	6.3	3:34				
HKG-SFO	2/ 5/78	113	9:29		-53	FL370	1:45	29.7N	134.0E	FL368	-43.7	3.7	FL369	-45.7	1.4	4:29	FL390	-49.8	2.6	2:49
HKG-SFO	2/ 7/78	111	9:40		-54	FL391	2:59	30.8N	148.5E	FL380	-49.4	3.4	FL410	-55.7	1.5	2:19				
HKG-SFO	2/11/79	120	10:37		-70	FL389	6:55	46.0N	167.6W	FL375	-56.3	8.3	FL330	-37.1	1.1	2:34	FL370	-46.4	.9	1:39
HKG-SFO	4/ 9/79	125	10:44		-69	FL410	8:19	47.0N	152.4W	FL386	-56.1	7.5	FL390	-46.9	3.8	2:29	FL410	-54.1	3.0	2:35
HKG-SFO	4/11/79	123	10:39		-70	FL410	8:54	44.4N	143.8W	FL387	-57.0	8.1	FL369	-45.3	.8	4:33	FL390	-44.3	2.2	1:23
HKG-SFO	4/13/79	129	10:58		-68	FL411	10:43	40.0N	125.6W	FL382	-54.3	8.3	FL410	-51.9	3.9	3:30				
HKG-SFO	5/26/78	119	10:36		-61	FL371	5:15	41.2N	170.6E	FL367	-51.2	8.4	FL330	-38.6	1.0	1:14	FL370	-44.5	2.9	1:56
HKG-SFO	5/28/78	129	11:00		-67	FL390	8:30	44.1N	152.2W	FL376	-55.4	8.7	FL390	-46.1	1.1	4:10	FL410	-58.5	7.5	1:54
HKG-SFO	5/30/78	130	11:09		-67	FL410	9:34	43.8N	138.6W	FL375	-53.7	10.0	FL330	-41.7	.4	1:09	FL369	-44.0	4.0	6:55
HKG-SFO	6/ 2/79	125	10:29		-59	FL370	8:39	44.4N	142.9W	FL363	-50.7	6.3	FL370	-50.5	.5	1:54	FL390	-50.2	2.4	6:49
HKG-SFO	6/ 4/79	124	10:39		-67	FL430	10:19	40.1N	126.4W	FL383	-52.1	8.2	FL369	-54.9	3.3	4:49	FL388	-60.6	7.1	5:02
HKG-SFO	6/ 6/79	134	11:04		-62	FL370	6:34	42.2N	177.7W	FL375	-51.8	7.7	FL369	-53.3	3.6	5:09	FL409	-60.7	6.8	4:59
HKG-SFO	8/16/78	134	11:09		-62	FL391	7:04	49.8N	172.1W	FL369	-50.2	9.1	FL369	-53.9	2.8	3:34	FL389	-54.6	4.9	2:49
HKG-SFO	8/18/78	134	11:09		-64	FL390	9:34	46.3N	138.5W	FL367	-49.4	10.8	FL410	-63.8	6.5	3:34				
HKG-SFO	8/20/78	136	11:47		-66	FL405	7:32	49.9N	170.9W	FL378	-50.5	10.5	FL330	-41.2	1.7	1:25	FL369	-56.3	1.6	1:54
													FL389	-56.8	7.5	4:30	FL410	-56.8	6.9	2:45
													FL330	-39.7	2.2	2:45	FL371	-55.5	2.5	2:34
													FL390	-56.6	3.9	4:39				
													FL370	-54.0	3.1	4:19	FL390	-60.4	6.2	5:24
													FL330	-38.0	1.6	2:09	FL371	-56.1	1.8	2:55
													FL389	-56.4	6.0	3:15	FL410	-63.9	3.9	2:14
													FL330	-37.8	1.1	1:20	FL369	-53.0	3.0	8:44
													FL371	-52.2	1.9	4:30	FL409	-56.2	4.5	3:54
													FL330	-37.1	.8	1:29	FL370	-55.2	3.3	5:09
													FL390	-50.1	2.0	1:40	FL411	-57.5	1.6	2:19
													FL330	-35.5	1.0	2:29	FL370	-51.2	2.0	3:00
													FL390	-57.5	1.6	5:04				
													FL330	-34.9	1.0	2:15	FL370	-48.6	1.4	3:40
													FL390	-60.1	3.2	4:29				
													FL330	-35.4	.8	2:34	FL370	-47.9	.6	2:19
													FL390	-54.9	7.2	2:07	FL409	-60.0	5.1	4:09

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HKG-SFO	9/15/78	128	10:59		-65	FL411	9:49	44.8N	135.4W	FL380	-53.1	8.8	FL331	-39.1	.9	1:45	FL371	-51.0	4.2	3:35
HKG-SFO	9/17/78	129	10:56		-68	FL411	9:08	47.7N	143.1W	FL378	-53.3	9.1	FL391	-60.9	1.8	1:40	FL411	-60.1	3.5	3:24
HKG-SIN	1/19/78	32	2:44		-66	FL430	0:30	17.3N	114.0E	FL426	-64.0	4.7	FL370	-51.7	1.4	2:25	FL370	-47.8	2.2	1:25
HKG-SIN	1/21/78	32	2:39		-66	FL430	1:24	10.4N	111.7E	FL426	-64.3	4.8	FL390	-54.1	5.1	2:55	FL410	-65.8	1.5	2:24
HKG-SIN	1/23/78	34	2:44		-67	FL430	2:24	4.8N	106.2E	FL423	-63.5	6.7	FL430	-65.1	.4	2:29				
HKG-SIN	1/26/78	33	2:45		-65	FL430	1:15	11.8N	112.2E	FL424	-62.7	6.2	FL430	-65.3	.4	2:29				
HKG-SIN	1/28/78	35	2:48		-65	FL430	1:39	9.0N	110.7E	FL423	-62.3	5.6	FL430	-64.5	.6	2:30				
HKG-SIN	1/30/78	33	2:44		-65	FL430	0:49	14.9N	113.4E	FL422	-62.2	8.2	FL430	-64.1	.5	2:35				
HKG-SIN	2/ 2/78	34	2:54		-69	FL431	2:29	5.0N	106.4E	FL423	-64.4	7.7	FL430	-64.3	.7	2:30				
HKG-SIN	2/ 4/78	34	2:44		-56	FL390	0:04	20.5N	114.2E	FL388	-55.2	2.9	FL430	-66.5	.9	2:39				
HKG-SIN	2/ 6/78	33	2:44		-66	FL430	0:09	19.7N	114.1E	FL425	-62.9	4.8	FL390	-55.7	.5	2:39				
HKG-SIN	2/10/78	32	2:39		-56	FL390	0:45	15.6N	112.8E	FL387	-54.5	2.9	FL430	-64.1	1.0	2:29				
HKG-SIN	4/12/79	30	2:18		-35	FL311	0:00	19.8N	113.9E	FL309	-32.2	1.8	FL390	-55.2	.4	2:24				
HKG-SIN	5/27/78	31	2:35		-66	FL431	1:54	7.8N	106.4E	FL422	-61.7	8.7	FL310	-32.6	.9	2:15				
HKG-SIN	5/29/78	26	2:23		-65	FL431	1:12	11.9N	110.4E	FL427	-63.0	6.1	FL431	-64.2	1.4	2:20				
HKG-SIN	8/17/78	31	2:29		-66	FL430	1:44	8.8N	107.3E	FL424	-63.1	6.8	FL431	-64.2	.8	2:00				
HKG-SIN	8/19/78	33	2:33		-66	FL430	1:43	9.2N	107.7E	FL423	-62.3	6.5	FL430	-64.8	1.0	2:19				
HKG-SIN	8/21/78	34	2:34		-66	FL431	1:41	9.1N	107.6E	FL414	-60.3	10.0	FL430	-64.1	1.4	2:18				
HKG-SIN	9/14/78	29	2:29		-68	FL431	2:09	5.8N	105.5E	FL424	-64.2	7.0	FL430	-64.5	1.0	2:15				
HKG-SIN	9/16/78	33	2:28		-67	FL430	2:01	6.6N	105.8E	FL424	-63.8	5.5	FL431	-66.2	1.2	2:14				
HKG-SIN	9/18/78	34	2:37		-67	FL432	2:00	7.0N	106.0E	FL415	-61.0	10.4	FL429	-65.3	1.2	2:13				
HKG-SIN	11/28/78	34	2:45		-65	FL428	0:09	19.7N	114.0E	FL422	-62.4	7.2	FL431	-65.5	.7	2:14				
HKG-SIN	12/ 4/78	31	2:39		-66	FL431	1:00	13.9N	111.8E	FL425	-63.1	5.4	FL430	-64.4	.6	2:30				
HKG-SIN	12/10/77	34	2:49		-67	FL430	2:45	3.2N	104.7E	FL425	-64.0	6.7	FL430	-64.5	1.1	2:24				
HKG-SIN	12/11/78	32	2:45		-66	FL430	1:30	11.0N	109.5E	FL425	-63.3	5.8	FL429	-65.3	.6	2:39				
HKG-SIN	12/25/78	31	2:34		-64	FL430	0:09	19.6N	113.9E	FL386	-54.3	7.6	FL430	-64.6	.5	2:30				
HKG-SYD	3/ 2/78	90	7:30		-51	FL361	7:25	32.6S	149.7E	FL340	-41.0	7.7	FL390	-55.9	.4	1:40				
HKG-SYD	5/13/77	84	7:19		-58	FL370	6:30	26.7S	144.4E	FL320	-36.7	11.5	FL330	-37.7	.5	3:07	FL370	-48.6	.9	3:05
HKG-SYD	8/12/77	87	7:19		-49	FL370	6:14	24.8S	142.8E	FL340	-40.5	6.9	FL290	-27.2	1.0	3:55	FL350	-44.2	3.3	2:05
													FL330	-38.4	.8	3:16	FL360	-45.9	.3	1:05
													FL369	-47.6	.9	1:33				
HND-HKG	1/23/76	44	3:39		-37	FL310	3:13	22.0N	119.3E	FL309	-35.1	1.6	FL310	-35.3	1.1	3:35				
HND-HKG	2/23/77	32	3:10		-45	FL280	0:00	34.0N	137.8E	FL280	-33.8	5.3	FL280	-33.8	5.3	3:10				
HND-HKG	3/12/75	44	3:34		-61	FL349	0:45	32.8N	133.3E	FL360	-54.4	4.5	FL349	-54.2	5.1	2:09				
HND-HKG	3/19/76	43	3:35		-43	FL311	0:05	34.0N	138.4E	FL310	-35.6	2.1	FL311	-35.6	2.1	3:24				
HND-HKG	3/24/77	49	3:56		-52	FL350	0:26	33.6N	136.4E	FL348	-49.3	3.0	FL350	-49.9	1.4	3:46				
HND-HKG	3/31/77	43	3:45		-52	FL351	0:45	33.1N	134.3E	FL348	-48.3	3.5	FL351	-48.8	2.1	3:34				
HND-HKG	4/ 8/77	39	3:09		-52	FL351	0:09	33.9N	137.1E	FL349	-48.6	2.8	FL350	-48.9	2.1	3:00				
HND-HKG	4/19/77	43	3:30		-49	FL351	0:24	33.5N	136.0E	FL348	-45.9	1.8	FL350	-46.2	1.5	3:15				
HND-HKG	5/20/78	42	3:26		-46	FL351	0:15	33.9N	137.1E	FL348	-42.2	3.2	FL350	-42.7	2.3	3:11				
HND-HKG	6/23/77	38	3:04		-43	FL351	0:19	33.6N	136.2E	FL347	-39.8	3.6	FL350	-40.6	1.2	2:49				
HND-HKG	7/28/77	34	2:49		-44	FL351	0:15	33.4N	136.6E	FL346	-40.8	4.0	FL350	-41.8	1.6	2:34				
HND-HKG	8/13/76	33	2:44		-31	FL310	1:53	25.8N	122.4E	FL297	-26.5	4.5	FL279	-21.2	.8	1:03				
HND-HKG	8/27/77	32	2:55		-43	FL350	1:40	27.8N	125.0E	FL348	-40.9	2.4	FL350	-41.6	.8	2:30				
HND-HKG	9/ 6/76	33	2:48		-53	FL390	2:38	22.3N	117.4E	FL385	-49.1	3.5	FL390	-50.0	1.5	2:28				
HND-HKG	10/ 8/77	36	3:00		-46	FL351	1:10	30.7N	129.1E	FL348	-44.6	2.5	FL350	-45.1	.6	2:49				
HND-HKG	10/14/77	35	3:05		-47	FL351	3:00	22.3N	116.6E	FL349	-44.7	1.5	FL351	-44.8	1.2	2:55				
HND-HKG	10/21/77	39	3:18		-46	FL350	2:23	25.9N	122.5E	FL347	-42.5	2.7	FL350	-42.8	2.3	3:05				
HND-HKG	10/27/77	32	2:45		-50	FL351	0:08	33.8N	136.8E	FL348	-44.3	2.5	FL350	-44.5	1.9	0:00				
HND-HKG	12/30/76	45	3:54		-46	FL350	3:45	22.3N	117.1E	FL338	-43.1	1.9	FL349	-44.2	.9	2:49				
HND-HNL	3/20/77	68	5:39		-57	FL371	0:30	35.9N	148.1E	FL368	-52.3	2.6	FL371	-52.5	2.0	5:24				
HND-HNL	5/12/76	66	5:34		-58	FL366	2:45	34.2N	174.4E	FL353	-50.8	5.8	FL331	-44.5	1.7	1:40	FL371	-55.3	1.2	2:44

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HND-HNL	5/17/78	69	5:42	-56	FL370	4:42	26.5N	168.7W	FL346	-48.7	5.1	FL330	-44.4	.9	2:18	FL350	-51.4	.8	1:05
HND-HNL	6/ 2/77	71	6:00	-58	FL391	2:55	31.9N	174.4E	FL379	-52.0	5.9	FL370	-53.7	1.8	1:49	FL370	-53.7	1.8	1:49
HND-HNL	6/ 5/77	69	5:49	-55	FL371	3:20	31.9N	179.7W	FL361	-50.2	4.5	FL370	-48.3	2.7	2:34	FL391	-56.6	.5	3:04
HND-HNL	6/20/77	72	5:56	-57	FL391	2:56	37.0N	177.4E	FL378	-52.9	3.8	FL370	-52.8	1.2	4:04	FL370	-52.8	1.2	4:04
HND-HNL	7/ 6/77	70	6:04	-61	FL391	4:14	27.9N	175.0W	FL380	-54.8	5.1	FL370	-51.2	.6	2:31	FL390	-55.6	1.4	3:00
HND-HNL	7/17/77	70	5:48	-60	FL391	5:33	22.7N	162.4W	FL367	-50.7	7.5	FL372	-51.9	1.2	2:24	FL390	-58.1	1.3	3:14
												FL350	-45.0	.7	1:14	FL370	-51.5	1.2	1:45
												FL390	-58.3	1.0	1:49				
HND-HNL	11/14/76	68	5:22	-54	FL389	3:31	31.2N	175.2W	FL365	-47.6	5.0	FL329	-40.5	1.0	1:30	FL369	-50.3	1.1	1:07
												FL388	-51.1	1.1	2:23				
HND-HNL	12/ 5/76	28	2:37	-46	FL370	1:48	33.9N	166.2E	FL355	-44.5	1.3	FL349	-43.6	1.0	1:07				
HND-HNL	12/12/76	62	5:14	-54	FL370	0:55	35.1N	154.1E	FL367	-50.0	2.4	FL370	-50.4	1.7	4:59				
HND-IAD	12/18/77	133	11:28	-67	FL370	2:59	54.2N	175.7E	FL379	-56.0	6.0	FL349	-54.1	4.8	2:45	FL369	-62.3	4.7	2:29
												FL390	-58.1	2.5	3:23	FL409	-49.2	2.1	2:08
HND-JFK	1/10/78	131	11:09	-70	FL391	7:24	62.9N	117.8W	FL375	-52.8	6.4	FL349	-46.1	2.9	2:15	FL370	-50.3	2.3	3:04
												FL390	-57.4	5.4	5:19				
HND-JFK	1/13/78	133	11:18	-65	FL364	11:18	41.9N	75.0W	FL377	-51.3	4.9	FL331	-49.2	1.8	2:40	FL370	-48.7	6.4	2:05
												FL390	-57.1	2.5	1:44	FL410	-50.9	2.1	3:52
HND-JFK	1/16/78	124	10:56	-59	FL366	10:56	41.9N	75.0W	FL390	-49.0	3.9	FL370	-43.0	1.6	2:05	FL390	-50.1	1.5	3:15
												FL410	-52.3	1.2	2:05	FL430	-50.3	1.5	1:45
HND-JFK	1/23/77	136	11:15	-60	FL387	11:10	41.8N	75.5W	FL387	-51.0	2.6	FL369	-51.3	1.5	4:08	FL390	-50.6	2.6	1:45
												FL409	-51.2	2.4	4:38				
49 HND-JFK	2/ 9/78	132	11:34	-60	FL370	4:45	45.0N	160.2W	FL364	-51.9	3.7	FL331	-54.6	3.9	2:20	FL369	-51.7	3.1	6:34
												FL409	-52.5	1.4	1:19				
HND-JFK	2/11/78	131	11:12	-61	FL370	3:45	43.0N	169.4W	FL377	-52.1	3.5	FL330	-54.5	1.7	2:39	FL369	-51.7	5.2	3:13
												FL410	-51.5	1.4	4:49				
HND-JFK	2/14/77	89	11:05	-72	FL410	7:39	57.8N	116.3W	FL395	-52.5	4.8	FL369	-50.5	1.5	2:20	FL389	-50.6	1.6	3:24
												FL409	-60.8	5.6	2:30	FL429	-51.2	1.5	1:55
HND-JFK	2/14/78	130	11:24	-57	FL410	8:35	30.5N	106.5W	FL379	-51.2	3.6	FL330	-52.9	3.3	1:45	FL370	-49.3	3.2	3:39
												FL390	-47.8	2.2	1:24	FL410	-53.8	1.8	3:49
HND-JFK	2/17/78	129	11:12	-67	FL390	6:29	48.8N	134.2W	FL375	-53.6	5.7	FL352	-51.6	4.8	1:20	FL369	-47.5	4.1	2:00
												FL390	-61.6	4.0	1:50	FL409	-55.0	2.2	3:43
HND-JFK	2/20/78	134	11:24	-66	FL410	8:19	56.0N	108.8W	FL383	-51.0	4.0	FL369	-49.3	1.7	5:39	FL409	-52.6	4.8	4:34
HND-JFK	2/21/77	78	10:58	-63	FL410	7:46	62.1N	110.7W	FL391	-53.0	4.6	FL369	-52.3	4.7	3:22	FL389	-53.8	1.7	2:30
												FL410	-53.4	4.9	4:15				
HND-JFK	2/23/78	132	11:18	-60	FL390	5:45	48.6N	145.3W	FL392	-51.9	4.2	FL370	-47.7	3.2	3:19	FL390	-54.0	4.5	2:33
												FL410	-55.2	1.4	1:45	FL430	-53.1	2.3	2:10
HND-JFK	2/26/78	134	11:24	-63	FL390	5:15	63.5N	162.6W	FL393	-52.2	3.2	FL369	-51.2	2.4	3:00	FL390	-54.9	4.2	2:19
												FL410	-51.5	2.1	5:19				
HND-JFK	2/28/77	96	10:59	-70	FL390	5:16	49.8N	151.3W	FL388	-52.9	5.8	FL369	-50.8	3.0	3:51	FL390	-60.1	6.5	2:22
												FL409	-50.4	3.4	3:51				
HND-JFK	3/ 1/78	140	11:33	-67	FL370	2:12	48.2N	163.4E	FL380	-53.9	6.6	FL350	-55.2	9.6	1:52	FL370	-59.9	3.3	2:55
												FL390	-50.5	4.6	3:15	FL409	-51.7	1.4	2:45
HND-JFK	3/ 3/77	100	11:14	-69	FL384	1:56	45.1N	164.9E	FL390	-55.1	7.1	FL370	-55.0	8.4	1:35	FL390	-54.2	7.8	3:58
												FL409	-55.6	4.8	4:22				
HND-JFK	3/ 4/78	135	11:25	-67	FL370	4:49	62.2N	171.2W	FL362	-53.5	4.8	FL330	-55.7	1.1	1:55	FL349	-55.9	5.0	2:19
												FL369	-54.9	4.5	3:30	FL390	-49.7	2.2	2:54
HND-JFK	3/ 7/78	137	11:24	-67	FL391	8:14	56.9N	112.2W	FL374	-53.4	7.0	FL370	-49.8	5.3	7:30	FL390	-60.7	3.4	2:57
HND-JFK	3/11/78	126	11:10	-64	FL350	0:59	42.0N	150.8E	FL371	-51.8	5.6	FL350	-54.9	7.0	2:59	FL369	-48.3	3.7	2:28
												FL390	-51.4	3.0	4:39				
HND-JFK	3/13/78	135	11:24	-67	FL370	2:09	46.1N	164.7E	FL364	-53.7	5.9	FL349	-54.7	5.3	1:40	FL370	-53.8	5.9	9:04
HND-JFK	3/16/78	131	10:54	-65	FL370	3:59	54.3N	172.7W	FL372	-51.9	4.6	FL330	-51.8	2.2	1:35	FL370	-55.6	5.4	3:24
												FL390	-50.0	2.8	5:19				

APPENDIX B  
FLIGHT SUMMARY

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-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----										
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM			
HND-JFK	3/19/78	129	10:53	-62	FL370	1:24	44.3N	155.1E	FL377	-51.1	4.7	FL370	-53.9	3.7	4:34	FL390	-48.9	4.7	4:43			
HND-JFK	3/25/78	134	11:20	-68	FL370	10:35	44.9N	82.5W	FL363	-56.5	7.1	FL370	-50.6	1.2	1:03							
												FL330	-55.3	2.2	1:30	FL349	-48.8	1.3	1:30			
												FL369	-52.3	6.2	2:58	FL390	-56.2	5.1	1:21			
												FL370	-64.9	1.4	3:30							
HND-JFK	3/26/77	125	10:38	-64	FL370	10:18	42.5N	79.2W	FL345	-55.5	4.6	FL330	-54.5	3.8	3:14	FL350	-54.7	4.2	1:05			
												FL369	-57.3	3.6	2:14	FL329	-53.4	2.9	1:35			
												FL369	-62.4	1.4	1:05							
												FL330	-55.6	1.9	1:05	FL350	-56.4	5.9	2:15			
HND-JFK	3/28/78	129	11:19	-63	FL350	1:19	41.8N	155.2E	FL367	-52.0	4.8	FL369	-49.6	2.8	3:19	FL390	-50.8	3.0	4:04			
												FL330	-49.2	1.1	1:45	FL350	-47.9	2.1	1:49			
HND-JFK	3/31/78	125	11:02	-68	FL390	10:37	45.3N	78.5W	FL365	-51.2	5.0	FL370	-50.1	1.0	2:20	FL390	-54.8	5.6	4:20			
												FL350	-54.9	6.3	2:25	FL370	-53.0	8.0	2:49			
HND-JFK	4/ 3/78	133	11:29	-64	FL370	5:19	50.9N	152.1W	FL374	-52.3	6.5	FL390	-49.4	2.2	2:15	FL409	-54.9	2.9	2:34			
												FL369	-53.2	7.4	10:34							
HND-JFK	4/ 6/78	133	11:14	-66	FL370	1:00	42.4N	151.5E	FL366	-52.9	7.4	FL349	-53.8	2.2	2:45	FL369	-50.5	2.6	2:15			
HND-JFK	4/ 8/77	130	11:09	-68	FL410	8:39	54.5N	102.6W	FL377	-53.6	5.8	FL389	-54.2	6.1	3:05	FL410	-57.2	7.1	2:30			
HND-JFK	4/ 9/78	127	11:11	-67	FL390	9:56	48.6N	87.7W	FL380	-53.4	6.7	FL369	-52.9	4.5	4:05	FL390	-53.8	7.7	6:37			
												FL346	-54.2	4.3	FL369	-56.7	4.4	4:39	FL330	-52.8	2.3	6:13
												FL368	-53.5	7.8	FL369	-61.0	2.1	2:10	FL370	-51.8	7.6	8:28
												FL377	-55.7	7.3	FL349	-58.5	5.6	3:11	FL369	-59.3	7.2	2:34
HND-JFK	4/12/77	132	11:23	-64	FL370	1:19	41.0N	156.2E	FL346	-54.2	4.3	FL389	-47.5	1.2	1:50	FL409	-56.1	5.4	3:07			
												FL350	-56.2	1.4	1:39	FL370	-58.4	6.6	5:05			
												FL390	-50.7	2.6	4:19							
												FL374	-55.5	7.6	FL350	-50.2	4.7	2:42	FL370	-55.7	7.8	2:35
HND-JFK	4/18/78	130	11:08	-69	FL410	10:28	46.5N	80.6W	FL374	-55.5	6.4	FL390	-58.0	5.3	4:34							
												FL349	-49.2	2.3	1:35	FL369	-57.0	4.7	3:52			
HND-JFK	4/19/77	131	10:56	-66	FL390	10:16	44.6N	80.8W	FL374	-55.5	6.4	FL389	-56.7	6.9	4:54							
												FL330	-49.3	1.0	1:34	FL350	-53.8	1.4	1:10			
HND-JFK	4/21/78	128	10:44	-65	FL370	6:04	62.8N	134.1W	FL365	-55.2	4.8	FL370	-57.0	5.3	5:24	FL390	-56.1	1.6	2:09			
												FL369	-55.4	5.6	FL350	-52.9	6.0	2:29	FL370	-55.9	4.4	4:49
												FL390	-57.5	5.1	3:20							
												FL331	-53.2	3.1	2:19	FL370	-53.8	4.0	3:59			
HND-JFK	4/22/77	134	11:14	-65	FL390	10:04	47.4N	86.3W	FL369	-55.4	5.6	FL389	-60.9	5.9	3:45							
												FL369	-55.3	8.5	3:45	FL389	-53.4	4.6	3:29			
												FL409	-55.8	1.8	2:49							
												FL350	-53.8	5.1	3:09	FL369	-48.0	2.4	2:54			
HND-JFK	4/27/78	136	11:34	-65	FL390	9:34	51.4N	94.6W	FL371	-54.0	6.0	FL390	-57.4	4.7	4:30							
												FL330	-46.4	2.6	4:05	FL369	-49.4	4.3	2:19			
												FL390	-53.7	4.0	3:19							
												FL350	-58.5	3.8	2:15	FL370	-52.4	2.2	2:54			
HND-JFK	4/30/78	134	11:34	-64	FL350	2:24	48.9N	164.8E	FL371	-53.3	4.6	FL390	-52.3	4.7	4:44							
												FL369	-49.2	6.5	5:07	FL389	-49.4	8.6	1:34			
HND-JFK	5/ 1/77	130	11:12	-68	FL410	10:47	43.7N	78.7W	FL388	-52.8	8.2	FL409	-58.5	6.5	4:05							
												FL350	-54.5	2.0	1:49	FL370	-53.1	3.7	2:04			
HND-JFK	5/ 3/78	127	11:04	-67	FL410	9:39	46.1N	92.4W	FL378	-54.8	5.5	FL390	-53.1	4.0	2:45	FL410	-61.2	4.8	2:45			
												FL350	-48.4	4.4	2:15	FL369	-53.8	1.8	2:39			
												FL390	-55.3	5.9	3:19	FL410	-56.8	2.6	2:35			
												FL350	-50.0	1.7	1:04	FL370	-48.5	5.1	3:19			
HND-JFK	5/12/78	122	10:49	-65	FL411	10:19	45.1N	78.3W	FL382	-51.1	5.5	FL390	-52.8	3.3	2:49	FL411	-53.9	6.1	2:39			
												FL349	-56.4	4.8	2:45	FL370	-45.9	1.1	1:50			
HND-JFK	5/15/78	134	11:35	-62	FL350	3:10	51.6N	171.6E	FL373	-52.2	5.9	FL390	-51.5	3.9	3:19	FL409	-55.9	5.8	1:55			

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
HND-JFK	5/18/78	130	11:23		-65	FL412	9:58	50.9N	84.7W	FL370	-51.5	6.6	FL331	-48.0	2.5	2:35	FL371	-51.4	6.5	2:29		
HND-JFK	6/ 2/77	585	11:54		-64	FL410	9:59	47.8N	96.4W	FL382	-52.2	5.1	FL390	-48.6	3.9	2:49	FL411	-59.8	5.1	1:49		
HND-JFK	6/13/76	132	11:25		-63	FL391	6:40	49.6N	132.4W	FL382	-49.3	6.0	FL370	-52.8	3.1	6:37	FL410	-53.8	5.4	4:15		
													FL350	-47.3	1.0	1:15	FL370	-47.6	2.3	2:41		
													FL390	-54.1	6.2	2:54	FL410	-47.5	1.4	1:49		
													FL430	-54.6	3.8	1:04						
HND-JFK	7/ 6/77	134	11:34		-62	FL390	5:15	50.6N	156.1W	FL385	-52.3	5.7	FL350	-48.5	5.5	2:09	FL370	-52.3	2.5	1:49		
HND-JFK	7/10/77	134	11:27		-65	FL410	10:17	47.8N	86.7W	FL379	-50.6	7.3	FL390	-54.5	5.0	2:45	FL410	-53.9	5.8	4:04		
HND-JFK	7/15/77	118	11:00		-63	FL393	7:32	48.7N	118.4W	FL378	-53.4	7.4	FL350	-45.2	2.0	2:17	FL369	-49.5	5.6	3:44		
HND-JFK	7/18/76	133	11:05		-62	FL370	4:39	56.8N	162.0W	FL373	-51.1	5.7	FL390	-49.1	1.5	1:15	FL410	-57.7	5.7	3:30		
HND-JFK	7/19/77	124	11:24		-61	FL370	3:30	51.1N	179.3W	FL383	-53.7	5.9	FL349	-46.8	4.5	1:50	FL369	-52.3	3.2	4:46		
HND-JFK	7/30/77	136	11:46		-64	FL410	11:01	45.6N	81.9W	FL381	-51.3	7.7	FL410	-60.2	1.7	3:22	FL370	-53.0	5.9	3:45		
HND-JFK	8/ 2/77	130	11:32		-63	FL410	11:05	43.8N	78.8W	FL380	-49.6	5.5	FL330	-45.7	3.5	2:30	FL410	-54.2	1.9	3:15		
HND-JFK	8/ 8/77	148	11:27		-65	FL430	11:27	41.1N	76.4W	FL380	-50.7	7.4	FL390	-55.8	2.6	5:15	FL389	-49.9	1.0	1:49		
													FL409	-55.8	4.9	3:30						
													FL329	-37.9	1.5	1:04	FL369	-51.0	5.7	3:49		
HND-JFK	8/18/77	108	10:58		-58	FL390	6:15	66.3N	137.2W	FL384	-45.1	9.8	FL389	-60.5	1.8	1:05	FL410	-54.5	5.3	4:34		
HND-JFK	8/21/77	126	11:10		-64	FL390	6:36	66.0N	133.2W	FL380	-51.8	6.6	FL349	-45.6	2.6	2:50	FL369	-53.4	3.8	1:45		
HND-JFK	8/27/77	106	11:09		-61	FL411	10:44	42.6N	79.2W	FL365	-47.6	8.6	FL390	-51.4	3.7	2:54	FL409	-51.4	4.9	3:23		
HND-JFK	8/30/77	115	11:19		-67	FL430	11:09	42.1N	77.1W	FL396	-54.4	6.9	FL350	-44.7	1.9	1:27	FL370	-48.7	4.3	3:49		
													FL390	-57.0	4.8	1:50	FL410	-53.1	1.2	1:50		
													FL430	-62.0	2.6	1:30						
													FL350	-41.4	7.7	2:09	FL369	-45.2	4.1	2:29		
													FL390	-50.2	3.6	2:53	FL410	-43.6	34.4	2:55		
													FL350	-48.4	2.7	2:21	FL369	-52.8	4.3	2:19		
													FL389	-57.7	7.1	3:00	FL410	-49.1	3.4	3:00		
													FL330	-36.8	9.9	1:30	FL350	-45.4	1.4	1:04		
													FL370	-52.1	2.1	3:49	FL410	-58.1	2.6	2:15		
													FL369	-50.3	1.0	1:35	FL369	-54.1	1.9	1:49		
													FL389	-58.7	3.9	1:30	FL409	-51.9	3.4	3:09		
													FL429	-61.3	4.3	2:20						
HND-JFK	9/ 2/77	131	11:07		-64	FL409	10:37	44.4N	80.4W	FL379	-53.8	6.0	FL350	-49.1	3.1	2:49	FL369	-52.9	5.0	2:24		
HND-JFK	9/ 3/76	127	10:50		-61	FL410	7:15	49.4N	120.4W	FL390	-53.5	4.7	FL390	-55.1	3.8	2:18	FL409	-59.1	3.4	2:55		
HND-JFK	9/ 6/76	134	11:28		-64	FL410	6:39	50.4N	135.0W	FL394	-54.9	6.3	FL369	-52.6	1.8	4:14	FL389	-51.2	5.0	2:00		
HND-JFK	9/ 8/77	121	10:49		-67	FL411	9:20	49.7N	90.5W	FL385	-52.2	6.1	FL409	-57.7	3.0	2:09	FL429	-55.3	3.4	1:39		
													FL369	-53.5	3.8	3:15	FL390	-54.6	7.2	2:54		
													FL410	-54.2	5.2	2:29	FL429	-60.6	2.5	2:05		
													FL350	-47.1	1.2	2:00	FL369	-54.3	4.2	2:30		
													FL390	-48.4	1.9	1:39	FL410	-54.0	5.3	2:49		
													FL429	-60.6	2.8	1:09						
HND-JFK	9/ 9/76	134	11:07		-62	FL370	4:32	57.6N	167.7W	FL387	-52.2	5.8	FL369	-51.2	4.3	4:47	FL389	-50.0	4.4	1:36		
HND-JFK	9/11/76	124	10:46		-60	FL390	8:31	53.4N	99.6W	FL381	-51.4	5.6	FL409	-55.1	4.6	4:11	FL390	-53.5	3.3	2:54		
HND-JFK	9/12/77	120	10:19		-64	FL410	10:00	43.7N	79.2W	FL386	-51.9	5.4	FL369	-49.4	4.0	5:16						
HND-JFK	9/13/76	133	11:09		-65	FL450	10:44	44.7N	77.9W	FL396	-50.7	5.9	FL409	-56.3	3.9	1:59	FL390	-53.8	5.5	2:28		
HND-JFK	9/15/77	118	10:39		-65	FL410	9:44	48.5N	82.0W	FL382	-52.3	6.3	FL369	-49.5	1.6	4:14						
													FL410	-54.7	4.8	3:06	FL389	-47.2	3.4	2:49		
													FL370	-47.1	2.4	2:55	FL429	-55.9	3.3	1:49		
													FL409	-54.0	9.9	2:30	FL369	-49.9	4.0	2:54		
													FL349	-46.1	3.3	1:10	FL409	-59.0	5.0	2:50		
													FL390	-52.7	3.0	2:54						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HND-JFK	9/25/77	122	11:19		-64	FL410	10:54	42.0N	78.6W	FL368	-48.4	5.7	FL309	-42.8	2.2	1:25	FL349	-48.4	1.8	1:10
													FL370	-51.6	1.5	1:15	FL390	-48.6	3.6	3:34
HND-JFK	10/ 2/76	128	10:49		-61	FL410	8:44	49.6N	100.6W	FL386	-53.8	4.5	FL410	-54.7	4.0	2:10				
HND-JFK	10/ 5/77	127	11:09		-62	FL390	5:09	52.1N	154.6W	FL387	-54.5	4.2	FL369	-52.6	4.0	5:59	FL409	-55.9	3.4	4:24
													FL369	-53.7	3.7	4:39	FL390	-56.1	3.9	2:29
HND-JFK	10/ 8/76	132	10:59		-64	FL410	10:44	43.0N	77.4W	FL383	-53.2	5.1	FL410	-55.4	2.6	3:30				
													FL330	-52.9	2.4	1:15	FL370	-53.3	5.4	1:40
HND-JFK	10/11/76	129	10:58		-63	FL390	5:54	50.1N	140.1W	FL390	-54.6	4.7	FL389	-52.9	5.1	4:34	FL409	-54.4	4.9	2:54
													FL370	-52.0	4.0	4:49	FL390	-59.8	3.2	1:31
HND-JFK	10/14/76	134	10:57		-60	FL370	1:07	39.4N	154.2E	FL396	-53.0	4.1	FL409	-54.9	3.4	2:05	FL430	-57.5	2.0	1:46
													FL369	-54.4	4.7	3:04	FL389	-50.7	2.8	2:19
HND-JFK	10/17/76	132	11:10		-67	FL410	6:38	59.4N	133.3W	FL386	-55.1	5.3	FL409	-54.6	2.1	2:09	FL430	-52.9	2.6	2:45
													FL349	-52.4	1.9	1:04	FL369	-55.2	4.1	3:48
HND-JFK	10/20/76	134	11:24		-63	FL390	7:05	59.0N	127.4W	FL382	-53.2	4.7	FL409	-56.3	5.6	5:36				
													FL350	-52.8	3.7	2:45	FL369	-51.6	1.1	2:00
HND-JFK	10/20/77	118	10:55		-66	FL390	6:45	49.1N	125.5W	FL382	-50.5	7.9	FL390	-57.5	3.8	2:15	FL409	-52.8	4.5	3:45
													FL370	-46.3	4.3	4:14	FL390	-56.5	5.6	1:44
HND-JFK	10/29/76	123	10:36		-67	FL410	10:11	43.6N	78.8W	FL376	-52.2	6.8	FL409	-56.5	2.0	3:45				
													FL330	-52.2	3.0	1:49	FL369	-47.3	1.9	1:45
HND-JFK	11/ 1/76	132	11:01		-64	FL410	8:46	46.4N	102.4W	FL381	-53.6	5.8	FL389	-52.1	3.0	3:16	FL409	-61.7	4.5	2:30
													FL349	-47.8	4.3	2:04	FL369	-51.1	4.4	3:09
													FL389	-57.3	2.4	2:15	FL410	-61.4	1.7	1:15
HND-JFK	11/ 2/77	122	10:32		-65	FL410	9:57	44.7N	80.6W	FL376	-49.0	5.6	FL429	-56.1	3.4	1:35				
													FL350	-47.2	1.9	3:25	FL369	-49.1	1.5	1:53
HND-JFK	11/ 8/76	127	10:36		-66	FL410	6:26	59.2N	127.4W	FL397	-50.2	5.1	FL390	-46.5	1.9	2:48	FL410	-57.8	6.4	1:54
													FL369	-48.9	1.4	2:26	FL389	-46.5	2.8	2:35
HND-JFK	11/11/76	130	11:06		-64	FL410	7:56	57.4N	107.7W	FL394	-53.4	5.1	FL410	-56.2	5.2	2:30	FL430	-50.6	2.0	2:19
													FL370	-50.2	2.4	3:16	FL390	-54.5	4.2	3:09
HND-JFK	11/14/76	128	11:09		-63	FL370	1:54	47.8N	162.3E	FL389	-52.9	5.7	FL410	-60.1	3.0	2:05	FL430	-51.7	1.2	2:00
													FL369	-56.5	4.7	3:15	FL389	-47.9	2.9	3:09
HND-JFK	11/16/76	123	10:49		-63	FL370	0:34	37.5N	148.5E	FL395	-51.8	5.3	FL409	-55.0	3.6	4:10				
													FL369	-51.4	7.5	3:04	FL390	-48.4	2.0	2:30
HND-JFK	11/17/77	129	11:08		-65	FL370	5:18	58.2N	148.7W	FL373	-50.4	7.2	FL410	-55.3	3.0	2:15	FL430	-53.5	2.9	2:15
													FL350	-47.4	1.2	2:19	FL370	-61.5	3.7	2:34
HND-JFK	11/18/76	125	10:49		-66	FL390	2:19	44.1N	170.8E	FL400	-54.0	4.3	FL390	-49.5	2.1	2:49	FL410	-44.3	2.0	1:49
													FL369	-57.0	3.6	1:30	FL390	-54.8	5.4	3:39
HND-JFK	11/20/76	126	11:15		-62	FL410	8:06	47.3N	114.7W	FL382	-50.4	6.0	FL410	-51.9	1.4	2:50	FL430	-53.7	3.3	2:15
													FL349	-50.3	6.2	2:59	FL370	-46.3	3.7	2:31
HND-JFK	11/20/77	123	11:11		-69	FL410	10:45	42.3N	80.6W	FL370	-51.7	6.6	FL409	-52.9	5.0	5:04				
													FL330	-47.8	1.8	1:45	FL350	-47.7	3.5	2:46
HND-JFK	11/23/77	124	11:19		-59	FL350	3:04	53.1N	175.1E	FL377	-51.3	3.8	FL370	-53.2	4.8	2:19	FL409	-56.3	7.3	3:30
													FL330	-49.5	5.1	2:49	FL390	-52.5	2.5	5:39
HND-JFK	11/24/76	128	10:38		-53	FL370	0:15	37.4N	144.5E	FL391	-49.6	2.7	FL410	-50.4	2.4	2:04				
													FL369	-50.3	1.9	3:49	FL389	-45.9	1.7	1:49
HND-JFK	11/27/76	131	10:59		-64	FL410	10:49	42.8N	76.1W	FL383	-52.2	4.8	FL409	-50.4	1.5	2:34	FL429	-51.6	1.5	1:13
													FL350	-54.1	4.0	1:45	FL369	-54.5	2.2	2:24
HND-JFK	11/30/76	127	10:57		-69	FL410	6:16	61.4N	138.0W	FL391	-50.6	7.0	FL390	-53.4	2.9	2:35	FL409	-49.8	4.9	3:24
HND-JFK	12/ 2/76	130	11:04		-54	FL391	6:19	59.5N	137.9W	FL389	-48.9	2.4	FL369	-47.4	4.0	4:16	FL410	-53.0	7.9	6:11
													FL369	-49.0	1.9	4:08	FL390	-50.2	1.9	2:30
HND-JFK	12/ 5/76	128	10:59		-62	FL390	5:54	59.6N	144.8W	FL386	-50.6	4.4	FL409	-49.3	1.9	2:24	FL429	-47.1	1.7	1:24
													FL369	-47.8	1.6	3:59	FL389	-55.3	4.0	3:00
													FL410	-49.7	3.3	3:20				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HND-JFK	12/15/77	138	11:44	-60	FL330	0:15	35.3N	144.5E	FL373	-51.0	5.2	FL350	-56.3	2.2	2:24	FL369	-46.0	4.0	2:30
HND-JFK	12/21/77	133	11:19	-65	FL390	5:59	59.5N	144.3W	FL380	-52.3	6.2	FL390	-49.1	3.8	4:25	FL370	-50.0	7.7	2:10
HND-LAX	1/ 9/78	93	7:54	-57	FL401	7:54	35.0N	119.4W	FL400	-47.7	2.8	FL350	-48.8	2.8	2:19	FL409	-50.0	2.8	2:30
HND-LAX	1/12/78	98	8:20	-58	FL431	8:15	35.3N	120.1W	FL408	-48.1	4.1	FL390	-57.7	4.9	3:39	FL409	-47.2	2.0	3:24
HND-LAX	1/15/78	95	8:04	-57	FL357	0:06	35.5N	143.0E	FL391	-47.0	3.0	FL369	-45.8	1.9	2:14	FL409	-45.0	2.2	3:22
HND-LAX	1/18/78	92	8:12	-58	FL430	5:04	39.5N	153.6W	FL400	-49.3	5.2	FL430	-51.3	1.9	1:45	FL389	-45.6	.8	2:15
HND-LAX	1/22/77	95	8:11	-60	FL430	5:26	39.0N	149.2W	FL409	-51.4	4.5	FL369	-46.0	1.3	1:30	FL410	-48.1	3.9	1:24
HND-LAX	1/29/77	103	8:23	-64	FL430	7:16	38.9N	130.3W	FL403	-51.8	6.0	FL430	-52.6	2.3	3:02	FL410	-51.2	3.9	1:30
HND-LAX	2/13/78	93	8:04	-57	FL430	6:24	39.8N	137.2W	FL406	-53.0	2.3	FL390	-48.2	3.9	2:15	FL409	-49.5	4.1	3:26
HND-LAX	2/16/77	54	7:27	-58	FL370	3:40	39.5N	164.8W	FL382	-50.9	6.2	FL410	-47.2	2.3	3:04	FL409	-51.9	4.1	4:01
HND-LAX	2/16/78	93	8:04	-73	FL410	6:29	38.7N	135.8W	FL394	-56.9	6.6	FL390	-44.8	1.8	1:45	FL390	-51.5	1.8	2:40
HND-LAX	2/19/78	97	8:08	-65	FL410	6:53	38.1N	131.9W	FL406	-52.5	4.2	FL430	-55.9	1.5	1:39	FL409	-56.6	1.5	2:45
HND-LAX	2/20/77	74	7:52	-59	FL370	0:36	36.0N	149.1E	FL398	-50.1	5.1	FL369	-49.0	2.6	1:15	FL390	-52.3	1.4	1:54
HND-LAX	2/22/78	91	8:09	-63	FL410	7:04	38.0N	129.8W	FL393	-50.9	5.2	FL429	-55.9	2.6	1:40	FL410	-53.0	3.9	3:53
HND-LAX	2/25/78	94	8:03	-58	FL410	5:33	39.1N	146.0W	FL377	-49.8	5.0	FL369	-45.9	1.0	2:40	FL409	-46.8	2.5	4:37
HND-LAX	2/27/77	51	8:00	-64	FL409	4:48	42.4N	156.6W	FL388	-56.0	3.8	FL350	-45.3	1.3	3:48	FL409	-53.7	4.4	5:00
HND-LAX	2/28/78	95	8:04	-57	FL410	7:44	36.4N	123.1W	FL394	-47.4	5.2	FL369	-45.3	1.3	3:48	FL409	-54.7	2.9	3:49
HND-LAX	3/ 2/77	69	8:21	-74	FL409	6:37	44.0N	134.5W	FL395	-59.7	7.1	FL369	-54.0	2.1	2:43	FL409	-58.3	2.6	4:53
HND-LAX	3/ 3/78	99	8:23	-65	FL370	0:09	35.4N	144.1E	FL387	-52.0	5.0	FL369	-49.3	2.8	1:15	FL390	-42.1	2.6	2:55
HND-LAX	3/ 6/78	100	8:24	-67	FL389	8:14	35.8N	121.6W	FL371	-57.6	6.7	FL410	-51.0	3.8	3:29	FL409	-58.8	7.5	5:36
HND-LAX	3/ 9/78	99	8:24	-69	FL390	6:49	40.3N	135.9W	FL377	-57.0	6.1	FL369	-62.0	5.6	2:18	FL409	-60.8	6.0	3:29
HND-LAX	3/12/78	97	8:14	-67	FL391	6:19	41.9N	139.2W	FL385	-57.3	6.5	FL390	-50.5	2.5	7:14	FL390	-63.1	3.8	1:29
HND-LAX	3/15/78	102	8:44	-69	FL390	4:00	48.0N	170.8W	FL383	-58.9	8.1	FL370	-57.0	6.6	7:30	FL390	-60.0	5.9	2:00
HND-LAX	3/18/78	102	8:39	-68	FL390	5:24	43.1N	150.7W	FL376	-55.6	7.6	FL370	-54.3	4.2	4:34	FL389	-63.0	3.1	3:34
HND-LAX	3/24/78	98	8:23	-69	FL390	7:13	38.1N	130.7W	FL388	-57.8	7.6	FL369	-57.6	6.5	6:54	FL390	-63.3	3.0	2:25
HND-LAX	3/25/77	93	8:04	-65	FL390	6:14	48.2N	134.0W	FL392	-56.1	6.7	FL370	-50.1	1.1	1:24	FL389	-59.0	5.2	5:54
HND-LAX	3/27/78	97	8:24	-68	FL390	7:09	39.3N	132.4W	FL369	-54.8	6.0	FL369	-51.3	6.5	4:45	FL390	-61.5	7.2	6:44
HND-LAX	3/30/78	100	8:24	-67	FL390	6:15	41.1N	141.0W	FL374	-55.6	7.0	FL370	-48.3	1.7	1:26	FL390	-61.5	4.6	3:19
HND-LAX	4/ 2/78	93	8:04	-65	FL370	6:49	39.8N	132.6W	FL369	-56.8	5.6	FL390	-65.3	4.7	2:29	FL389	-56.4	4.7	1:30
HND-LAX	4/ 5/78	103	8:24	-66	FL390	4:39	40.9N	162.0W	FL376	-58.0	6.1	FL389	-56.9	6.6	6:44	FL390	-63.1	3.8	1:29
HND-LAX	4/ 7/77	99	8:24	-68	FL410	5:19	43.2N	152.5W	FL391	-58.8	6.8	FL370	-52.9	4.8	5:39	FL390	-60.0	5.9	2:00
HND-LAX	4/ 8/78	100	8:34	-65	FL389	3:15	45.0N	179.9W	FL382	-56.7	6.1	FL369	-53.9	6.7	5:45	FL389	-63.0	3.1	3:34
HND-LAX	4/11/77	97	8:14	-63	FL370	7:24	39.9N	125.5W	FL368	-56.6	5.3	FL370	-56.9	5.6	7:49	FL390	-63.3	3.0	2:25
HND-LAX	4/11/78	101	8:48	-70	FL390	5:08	43.0N	158.1W	FL377	-59.5	6.6	FL369	-53.8	4.2	3:52	FL389	-59.0	5.2	5:54
HND-LAX	4/14/77	95	8:20	-64	FL370	2:34	42.1N	171.1E	FL368	-57.8	4.4	FL370	-58.1	3.7	8:05	FL390	-63.4	2.7	4:09
HND-LAX	4/14/78	103	9:04	-67	FL370	3:39	47.0N	179.8W	FL374	-58.6	6.1	FL369	-60.9	3.7	6:04	FL390	-54.2	6.9	2:39
HND-LAX	4/17/78	97	8:29	-69	FL390	4:39	47.4N	162.9W	FL381	-59.2	5.2	FL370	-58.3	.7	2:45	FL390	-60.2	5.5	5:14
HND-LAX	4/18/77	93	8:16	-71	FL410	6:07	46.4N	140.2W	FL405	-61.2	5.7	FL410	-62.8	4.5	6:51				
HND-LAX	4/20/78	97	8:14	-68	FL390	4:04	45.0N	168.9W	FL387	-62.5	4.1	FL390	-63.1	2.8	7:39				
HND-LAX	4/21/77	94	8:16	-67	FL390	7:21	38.7N	127.5W	FL386	-57.2	5.1	FL390	-58.0	5.0	7:09				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
HND-LAX	4/23/78	95	8:15		-68	FL390	6:54	42.4N	131.1W	FL380	-59.7	5.5	FL369	-56.1	4.1	3:39	FL389	-63.2	3.5	4:09		
HND-LAX	4/26/78	98	8:08		-64	FL411	6:53	40.7N	132.0W	FL393	-55.0	4.2	FL370	-54.3	4.4	2:54	FL410	-56.0	3.3	4:49		
HND-LAX	4/27/76	99	8:24		-66	FL391	3:06	44.9N	179.0E	FL397	-58.0	6.0	FL370	-58.6	2.8	2:08	FL390	-64.4	1.5	1:23		
													FL410	-51.1	3.0	2:14	FL430	-62.3	2.4	1:39		
HND-LAX	4/27/77	100	8:35		-64	FL370	4:43	42.2N	160.6W	FL374	-55.2	5.3	FL369	-57.3	4.2	5:48	FL389	-51.0	4.0	2:26		
HND-LAX	4/29/76	105	8:39		-65	FL391	3:15	42.1N	177.8W	FL380	-56.8	7.0	FL370	-56.5	1.4	3:00	FL391	-58.2	7.5	5:17		
HND-LAX	4/29/78	95	8:04		-70	FL411	6:04	41.2N	141.8W	FL388	-59.3	6.7	FL369	-54.0	3.8	2:30	FL390	-60.1	4.5	2:49		
													FL410	-65.6	4.1	2:19						
HND-LAX	4/30/77	100	8:15		-64	FL370	5:56	43.0N	141.1W	FL359	-53.3	4.4	FL350	-52.9	1.3	3:18	FL369	-53.5	5.4	3:40		
HND-LAX	6/ 4/77	93	8:49		-65	FL410	8:00	37.9N	127.6W	FL391	-56.6	6.5	FL369	-52.2	1.6	2:39	FL395	-61.1	1.0	2:00		
													FL410	-58.3	6.3	3:24						
HND-LAX	7/ 5/77	89	8:44		-69	FL410	6:30	44.5N	142.0W	FL393	-57.8	6.4	FL370	-54.7	2.6	3:19	FL410	-62.4	4.1	3:55		
													FL429	-59.1	1.9	1:04						
HND-LAX	7/ 9/77	105	8:52		-67	FL410	6:52	43.5N	137.7W	FL394	-57.9	6.9	FL390	-56.6	2.3	3:55	FL410	-63.3	3.1	3:32		
HND-LAX	7/16/76	101	8:34		-63	FL412	3:59	46.0N	170.0W	FL413	-56.4	5.3	FL391	-56.5	2.0	1:50	FL411	-57.2	3.5	2:39		
													FL431	-55.4	2.6	1:09	FL449	-60.8	1.1	1:39		
HND-LAX	7/18/77	90	8:22		-61	FL390	3:27	49.5N	178.0W	FL386	-55.8	4.6	FL369	-53.3	2.7	3:12	FL389	-59.1	1.1	2:04		
													FL409	-57.5	2.2	2:40						
HND-LAX	7/29/77	99	8:49		-62	FL410	7:54	38.8N	127.7W	FL389	-56.0	4.1	FL369	-53.1	1.5	3:19	FL389	-60.0	.8	1:34		
													FL410	-57.6	4.1	3:29						
HND-LAX	8/ 1/77	106	9:17		-63	FL410	6:33	45.6N	144.2W	FL388	-51.5	6.5	FL369	-50.0	1.7	3:39	FL390	-46.8	5.8	1:30		
													FL410	-56.5	3.7	3:42						
54 HND-LAX	8/ 4/77	84	9:36		-58	FL374	4:51	46.3N	165.9W	FL387	-52.0	5.1	FL374	-51.8	3.2	4:59	FL410	-54.1	2.0	3:38		
HND-LAX	8/17/77	99	8:52		-61	FL410	6:08	42.5N	146.1W	FL387	-50.4	5.7	FL369	-47.7	1.7	4:03	FL410	-54.4	4.1	4:28		
HND-LAX	8/20/77	92	8:32		-59	FL410	7:57	37.3N	123.9W	FL392	-51.8	4.8	FL370	-50.1	2.2	2:07	FL390	-55.2	.8	1:41		
													FL410	-53.1	2.9	3:30						
HND-LAX	8/26/77	87	8:09		-63	FL410	5:15	46.2N	151.4W	FL384	-53.4	8.3	FL370	-48.3	2.6	4:40	FL410	-62.8	.4	2:54		
HND-LAX	8/29/77	91	8:26		-62	FL410	6:48	43.5N	134.5W	FL393	-55.0	5.3	FL370	-52.2	2.0	2:18	FL390	-52.4	2.5	1:40		
													FL410	-58.6	2.5	4:08						
HND-LAX	9/ 1/77	102	8:29		-67	FL410	6:44	43.7N	135.1W	FL398	-58.0	5.7	FL369	-53.1	2.7	2:30	FL410	-60.9	3.2	4:30		
HND-LAX	9/ 5/76	98	8:26		-66	FL409	4:51	46.0N	159.2W	FL397	-57.2	5.8	FL373	-52.1	3.2	2:18	FL409	-59.9	4.1	5:42		
HND-LAX	9/ 7/77	101	8:49		-67	FL410	5:39	50.2N	149.6W	FL391	-56.8	6.1	FL369	-52.4	1.7	3:25	FL410	-60.8	3.5	5:04		
HND-LAX	9/ 8/76	103	8:55		-66	FL449	7:55	38.9N	127.9W	FL406	-56.8	6.6	FL369	-51.0	1.5	1:55	FL409	-56.6	2.7	3:47		
													FL448	-65.2	.6	1:29						
HND-LAX	9/11/77	107	9:24		-66	FL410	5:34	50.2N	155.2W	FL389	-55.5	7.5	FL370	-49.6	1.5	3:49	FL389	-54.4	4.0	1:10		
													FL409	-62.7	3.5	3:59						
HND-LAX	9/14/77	99	8:45		-68	FL410	5:50	52.8N	145.5W	FL400	-56.0	6.4	FL369	-51.1	.9	1:10	FL390	-51.3	2.8	2:04		
													FL410	-63.4	2.8	3:06	FL430	-55.2	.9	1:34		
HND-LAX	9/15/76	98	8:22		-60	FL410	5:37	46.8N	146.7W	FL387	-51.4	5.2	FL370	-48.3	.8	2:28	FL389	-50.8	1.8	2:45		
													FL409	-56.8	3.1	2:35						
HND-LAX	9/21/77	85	7:39		-66	FL410	5:30	46.0N	140.0W	FL390	-54.8	7.3	FL369	-47.2	1.7	2:49	FL390	-53.1	3.7	1:09		
													FL409	-62.1	2.8	3:14						
HND-LAX	9/24/77	102	8:34		-63	FL429	7:34	40.7N	127.0W	FL397	-54.5	6.0	FL369	-48.7	.5	2:09	FL389	-52.7	2.2	1:34		
													FL409	-57.2	1.5	2:09	FL428	-61.7	.9	1:54		
HND-LAX	10/ 1/76	97	8:19		-63	FL390	6:54	39.6N	132.2W	FL388	-56.9	5.4	FL390	-57.5	4.5	7:54	FL410	-58.8	1.5	4:59		
HND-LAX	10/ 4/77	101	8:41		-63	FL410	4:13	48.0N	169.7W	FL399	-57.9	3.6	FL389	-57.7	3.9	3:04	FL409	-56.0	2.8	6:15		
HND-LAX	10/ 7/76	103	8:39		-61	FL370	0:59	38.9N	152.5E	FL398	-55.9	3.4	FL370	-56.6	4.0	2:00						
HND-LAX	10/10/76	94	8:14		-66	FL410	1:24	41.4N	157.8E	FL406	-58.8	5.1	FL409	-59.4	3.8	7:54						
HND-LAX	10/13/76	101	8:33		-63	FL410	4:43	46.7N	157.4W	FL397	-56.4	4.1	FL369	-55.8	3.0	1:19	FL390	-52.6	1.1	1:10		
													FL410	-57.9	2.6	5:39						
HND-LAX	10/16/76	99	8:25		-65	FL409	5:59	42.5N	143.0W	FL387	-57.0	4.7	FL369	-56.0	2.5	4:09	FL409	-59.2	3.5	3:53		
HND-LAX	10/18/77	76	8:00		-60	FL410	6:34	40.7N	132.1W	FL389	-53.8	4.9	FL370	-51.1	3.2	2:55	FL410	-56.6	1.7	3:44		
HND-LAX	10/19/76	106	8:48		-62	FL370	2:44	39.5N	173.8E	FL396	-58.1	3.2	FL369	-58.3	1.3	2:34	FL409	-58.4	2.2	5:48		

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
HND-LAX	10/19/77	94	7:47		-65	FL390	5:03	43.9N	149.1W	FL380	-55.1	6.5	FL370	-51.3	3.0	2:07	FL390	-58.8	4.0	5:09		
HND-LAX	10/28/76	98	8:14		-68	FL430	7:34	37.7N	125.2W	FL413	-58.4	5.3	FL409	-56.3	2.3	5:15	FL429	-64.1	2.9	2:34		
HND-LAX	10/31/76	94	8:04		-64	FL430	6:45	39.8N	132.4W	FL404	-55.1	5.3	FL390	-53.8	1.8	2:00	FL409	-52.3	1.1	2:10		
HND-LAX	11/ 1/77	98	8:21		-61	FL370	1:34	43.2N	158.2E	FL390	-55.1	4.1	FL429	-61.1	3.2	2:34	FL390	-55.6	1.2	1:24		
HND-LAX	11/16/77	79	8:29		-65	FL410	4:30	40.1N	163.0W	FL393	-57.6	6.1	FL370	-57.7	3.1	1:30	FL410	-61.1	2.5	5:04		
HND-LAX	11/19/77	86	7:34		-69	FL421	7:04	38.5N	128.3W	FL393	-53.5	8.2	FL407	-55.3	4.3	3:41	FL390	-47.9	2.3	2:49		
HND-LAX	11/22/77	91	7:34		-61	FL410	5:00	39.8N	147.6W	FL395	-52.5	4.9	FL369	-53.1	1.9	2:55	FL390	-46.5	1.1	1:04		
HND-LAX	11/26/76	99	8:34		-69	FL410	7:29	41.1N	127.9W	FL400	-55.9	9.4	FL410	-61.3	5.8	2:24	FL409	-56.8	10.4	6:09		
HND-LAX	12/ 4/76	101	8:30		-68	FL410	6:49	41.8N	135.2W	FL391	-55.0	8.4	FL369	-47.5	3.3	3:35	FL409	-61.3	5.7	4:39		
HND-LAX	12/17/77	97	8:14		-70	FL390	1:00	39.0N	153.2E	FL393	-58.2	7.1	FL390	-61.3	5.8	5:39	FL409	-51.7	3.1	2:09		
HND-LAX	12/20/77	106	8:56		-69	FL410	8:34	37.4N	122.2W	FL392	-56.1	7.6	FL370	-46.2	1.2	2:19	FL390	-57.6	4.4	2:30		
HND-ORD	5/ 9/78	132	11:09		-65	FL370	6:14	60.3N	144.4W	FL364	-49.3	5.7	FL409	-61.9	4.5	3:47	FL370	-51.3	4.8	3:00		
HND-SFO	1/ 8/77	89	7:38		-66	FL390	6:58	38.0N	130.7W	FL362	-49.1	8.0	FL310	-42.3	3.1	2:20	FL410	-48.9	2.2	1:24		
HND-SFO	1/10/78	91	7:25		-56	FL370	7:07	37.5N	127.5W	FL354	-42.6	5.6	FL390	-52.3	2.7	3:00	FL370	-50.3	6.0	2:38		
HND-SFO	3/19/75	94	7:44		-64	FL370	7:39	37.9N	126.3W	FL338	-54.1	4.7	FL349	-42.2	1.5	1:49	FL370	-42.2	1.7	1:04		
HND-SFO	3/25/76	90	7:21		-64	FL371	6:22	41.6N	134.9W	FL359	-54.6	6.3	FL390	-58.6	6.4	1:45	FL370	-48.1	4.5	2:22		
HND-SFO	3/27/75	63	5:00		-59	FL330	3:00	44.8N	176.5E	FL328	-52.6	4.6	FL330	-37.3	3.1	1:57	FL309	-52.1	4.0	2:09		
HND-SFO	3/30/77	96	8:06		-65	FL371	3:48	45.8N	171.2W	FL353	-54.9	7.2	FL370	-48.1	4.5	2:22	FL370	-57.5	3.9	3:25		
HND-SFO	4/14/78	99	8:19		-62	FL370	5:30	46.1N	154.3W	FL340	-53.0	6.3	FL331	-47.4	1.2	1:03	FL371	-56.6	6.5	4:44		
HND-SFO	4/21/76	84	7:36		-65	FL391	7:26	37.9N	126.0W	FL362	-55.6	6.5	FL329	-56.8	1.9	2:24	FL349	-49.2	3.0	1:34		
HND-SFO	5/ 2/78	94	8:00		-68	FL391	2:24	44.7N	168.2E	FL393	-59.2	7.6	FL310	-45.1	1.4	1:24	FL350	-51.7	1.1	1:30		
HND-SFO	5/ 5/78	94	8:02		-64	FL374	3:41	45.3N	173.4W	FL372	-56.1	5.7	FL370	-59.9	4.6	4:41	FL369	-54.8	7.1	3:10		
HND-SFO	5/ 8/78	90	7:54		-70	FL410	7:34	38.7N	128.0W	FL395	-59.0	5.8	FL330	-54.7	2.1	3:44	FL370	-56.0	3.7	1:49		
HND-SFO	5/11/78	87	7:42		-66	FL412	3:22	51.1N	177.9W	FL396	-55.0	6.0	FL350	-56.2	5.3	2:08	FL370	-56.0	3.7	1:49		
HND-SFO	5/14/78	94	7:45		-65	FL412	7:39	39.4N	124.2W	FL401	-53.9	5.8	FL390	-60.1	3.6	2:02	FL410	-64.2	5.3	2:45		
HND-SFO	5/17/78	96	8:14		-67	FL412	7:14	42.9N	133.1W	FL393	-60.4	5.2	FL390	-57.8	7.0	3:56	FL372	-57.4	3.8	1:19		
HND-SFO	5/20/78	94	8:04		-70	FL412	5:19	46.1N	153.3W	FL391	-58.6	6.7	FL353	-52.7	2.1	2:36	FL410	-61.7	4.8	5:15		
HND-SFO	6/27/77	93	8:04		-60	FL391	6:04	47.5N	143.0W	FL377	-52.5	6.2	FL390	-59.2	4.5	3:40	FL390	-62.3	1.6	1:03		
HND-SFO	8/19/76	89	7:42		-50	FL369	6:54	42.5N	131.0W	FL344	-42.9	5.3	FL370	-53.8	3.4	1:45	FL411	-53.5	5.6	4:15		
HND-SFO	9/12/77	92	8:14		-61	FL390	5:59	48.6N	142.0W	FL360	-48.8	9.6	FL391	-59.6	1.9	1:09	FL391	-52.2	5.3	5:19		
HND-SFO	10/ 7/77	88	7:43		-66	FL391	5:08	48.3N	151.3W	FL364	-54.9	9.4	FL371	-57.9	1.5	2:04	FL390	-63.5	2.0	2:00		
HND-SFO	10/13/77	94	7:43		-60	FL371	5:28	44.8N	148.1W	FL358	-49.6	5.8	FL411	-60.8	5.4	3:44	FL391	-56.8	6.6	2:19		
HND-SFO	10/16/77	86	7:34		-59	FL391	6:14	44.1N	136.5W	FL359	-51.2	5.1	FL371	-55.7	1.2	2:09	FL373	-54.8	2.6	2:04		
													FL350	-47.3	3.0	1:14	FL330	-45.8	1.3	1:34		
													FL391	-54.5	4.8	4:09	FL369	-48.0	1.5	2:25		
													FL310	-36.4	1.0	1:03	FL350	-43.9	2.1	1:54		
													FL350	-40.0	1.0	1:55	FL390	-59.2	1.7	2:25		
													FL330	-37.1	1.7	1:54	FL370	-57.7	2.7	2:26		
													FL370	-55.4	3.2	1:19						
													FL330	-42.7	1.7	2:14						
													FL390	-64.0	1.6	2:34						
													FL350	-46.8	1.4	1:14	FL370	-51.8	5.7	4:44		
													FL330	-49.4	1.5	1:54	FL350	-55.9	2.9	1:34		
													FL370	-47.3	4.8	2:19	FL390	-54.6	3.6	1:15		

APPENDIX B  
FLIGHT SUMMARY

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-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
HND-SFO	10/18/76	91	7:50		-57	FL370	2:54	42.9N	178.6E	FL365	-51.4	4.4	FL348	-51.9	1.2	1:34	FL369	-52.0	3.8	2:51		
HND-SFO	10/20/77	81	6:59		-61	FL371	5:44	41.3N	137.4W	FL347	-47.4	10.4	FL389	-54.1	1.3	2:10	FL370	-58.9	1.7	3:04		
HND-SFO	12/22/76	89	7:20		-62	FL350	5:58	39.0N	140.2W	FL338	-52.8	5.5	FL331	-38.8	2.5	3:30	FL349	-58.2	2.4	2:46		
HND-SYD	2/ 7/78	95	7:59		-46	FL365	4:59	8.0S	146.6E	FL340	-40.2	4.9	FL329	-49.1	3.6	4:28	FL370	-45.7	.5	2:54		
HNL-AKL	5/ 9/77	94	7:54		-60	FL391	7:24	33.0S	178.0E	FL363	-47.8	6.9	FL330	-37.0	.7	3:14	FL370	-49.2	.9	2:04		
HNL-AKL	7/25/77	85	7:17		-51	FL371	6:22	28.4S	176.2E	FL345	-42.5	7.8	FL350	-42.8	.7	2:40	FL370	-49.2	.9	2:04		
HNL-AKL	11/13/78	90	7:24		-53	FL350	7:15	34.8S	176.5E	FL338	-43.5	6.2	FL391	-56.5	2.2	2:09	FL350	-43.7	.7	1:30		
HNL-DFW	3/30/77	64	5:39		-61	FL420	1:49	28.5N	139.9W	FL421	-56.9	2.5	FL310	-32.4	.6	2:20	FL350	-47.5	2.8	4:49		
HNL-DFW	5/ 4/77	72	6:06		-62	FL388	4:09	33.4N	120.1W	FL382	-58.9	3.3	FL370	-50.0	.6	3:00	FL430	-55.9	1.3	1:55		
HNL-DFW	5/11/77	71	5:54		-68	FL410	4:52	34.3N	108.9W	FL390	-59.0	5.8	FL379	-58.6	1.3	3:54	FL389	-60.8	1.1	1:56		
HNL-DFW	12/15/76	71	6:04		-53	FL340	3:34	32.9N	124.8W	FL339	-47.9	3.6	FL381	-58.0	3.6	3:07	FL410	-62.4	3.6	2:19		
HNL-DFW	12/22/76	66	6:00		-67	FL420	0:25	22.8N	152.9W	FL427	-60.5	4.5	FL339	-48.3	2.5	5:54	FL449	-59.7	1.9	1:54		
HNL-DFW	12/29/76	67	5:49		-65	FL430	4:09	34.1N	116.7W	FL421	-60.8	3.4	FL419	-62.1	2.6	3:39	FL429	-62.6	1.1	2:10		
HNL-DTW	4/25/76	60	5:09		-60	FL370	3:19	40.0N	111.9W	FL334	-49.0	8.8	FL419	-60.5	1.6	3:19	FL369	-56.3	3.9	2:24		
HNL-GUM	2/ 3/76	83	6:37		-54	FL351	0:15	20.1N	162.3W	FL349	-47.1	2.0	FL289	-38.6	1.4	2:00	FL350	-42.8	.7	5:04		
HNL-GUM	3/18/77	77	6:29		-44	FL351	3:59	14.8N	167.3E	FL342	-40.3	4.9	FL350	-47.1	1.8	6:22	FL350	-45.0	3.0	4:50		
HNL-GUM	3/28/76	82	6:49		-51	FL350	1:59	17.9N	176.0E	FL343	-44.5	3.3	FL310	-30.9	.3	1:10	FL350	-42.7	.5	1:39		
HNL-GUM	3/30/79	84	6:54		-54	FL390	5:29	13.7N	157.2E	FL360	-45.4	6.0	FL330	-37.6	.5	1:15	FL390	-53.0	.3	1:30		
HNL-GUM	4/ 7/78	80	6:34		-46	FL350	1:30	19.5N	172.9W	FL341	-41.1	2.7	FL370	-48.2	.5	2:04	FL349	-42.4	1.6	4:59		
HNL-GUM	4/ 8/79	83	6:49		-49	FL351	1:19	20.6N	172.3W	FL345	-42.0	3.0	FL310	-37.1	.6	1:15	FL350	-41.8	.6	4:15		
HNL-GUM	4/15/77	78	6:54		-43	FL350	2:39	16.7N	178.5E	FL335	-38.9	4.0	FL350	-42.4	1.6	5:30	FL350	-43.2	1.2	5:09		
HNL-GUM	4/15/78	78	6:41		-43	FL350	4:26	14.6N	165.0E	FL344	-41.6	1.4	FL329	-39.4	1.0	1:10	FL391	-53.8	.5	2:00		
HNL-GUM	4/19/79	80	6:39		-48	FL351	1:30	19.7N	172.2W	FL342	-42.6	1.8	FL310	-40.3	1.5	1:15	FL350	-47.4	2.8	5:04		
HNL-GUM	4/21/79	76	6:14		-55	FL391	4:14	17.7N	163.2E	FL364	-49.9	3.5	FL351	-48.2	1.8	3:49	FL350	-45.3	1.7	4:04		
HNL-GUM	4/25/78	74	6:19		-52	FL350	2:09	25.0N	179.8E	FL344	-46.1	3.8	FL310	-39.8	.7	1:04	FL370	-50.0	0.0	1:10		
HNL-GUM	4/27/76	75	6:19		-52	FL351	0:40	22.6N	166.8W	FL347	-46.6	4.6	FL350	-47.7	3.3	5:39	FL390	-51.8	1.1	2:49		
HNL-GUM	5/ 9/79	86	7:04		-54	FL390	4:09	18.8N	168.8E	FL369	-48.4	4.6	FL350	-45.3	.6	2:30	FL310	-38.4	.5	1:04		
HNL-GUM	5/10/75	77	6:19		-52	FL350	1:49	25.1N	177.4W	FL341	-47.6	4.9	FL369	-51.8	1.1	3:30	FL349	-50.0	1.6	4:54		
HNL-GUM	5/15/79	79	6:34		-55	FL390	3:49	17.5N	167.1E	FL376	-51.9	4.3	FL309	-39.0	.8	1:04	FL390	-53.6	.8	2:44		
HNL-GUM	5/16/75	75	6:30		-51	FL350	1:19	22.9N	171.9W	FL341	-46.5	4.2	FL331	-43.4	.5	1:39	FL349	-48.5	1.5	5:10		
HNL-GUM	5/17/79	74	6:04		-48	FL351	2:00	21.1N	177.8W	FL344	-44.6	2.0	FL349	-48.3	1.0	5:44	FL350	-46.9	3.2	4:59		
HNL-GUM	5/28/75	68	5:59		-50	FL349	3:44	21.2N	163.7E	FL348	-47.9	2.4	FL350	-46.4	.6	3:04	FL350	-44.1	.8	2:37		
HNL-GUM	5/31/77	73	6:14		-56	FL391	4:49	17.3N	157.5E	FL362	-48.6	4.2	FL390	-54.1	.9	1:24	FL350	-46.5	1.5	3:45		
HNL-GUM	6/18/77	72	6:04		-51	FL349	2:15	24.1N	178.1E	FL334	-43.0	4.7	FL310	-38.1	1.3	1:54	FL350	-45.5	1.1	4:39		
HNL-GUM	7/10/77	71	6:04		-48	FL351	2:50	21.1N	175.0E	FL342	-43.6	3.9	FL310	-36.9	.6	1:04	FL349	-45.9	1.0	2:52		
HNL-GUM	7/12/78	82	6:26		-48	FL350	2:44	19.2N	175.7E	FL333	-42.0	4.4	FL309	-37.1	.3	2:30	FL350	-46.8	.7	2:54		
HNL-GUM	7/15/77	76	6:24		-51	FL351	2:04	25.9N	177.5W	FL345	-46.0	4.3	FL330	-45.4	.5	1:04	FL350	-46.3	2.1	4:14		
HNL-GUM	7/16/78	82	6:22		-46	FL350	3:39	18.6N	167.9E	FL328	-40.4	3.7	FL310	-37.7	1.2	3:19	FL350	-45.3	1.4	3:43		
HNL-GUM	7/20/78	77	6:29		-54	FL370	4:29	19.3N	161.6E	FL347	-45.7	5.5	FL309	-37.1	.3	1:05	FL350	-49.5	.9	4:00		
HNL-GUM	7/22/78	79	6:19		-51	FL350	2:26	24.8N	177.4E	FL338	-43.3	5.3	FL370	-51.0	1.3	1:54	FL369	-48.7	.8	2:39		
HNL-GUM	8/11/78	80	6:28		-47	FL351	2:54	24.0N	174.7E	FL339	-43.6	3.3	FL309	-36.4	1.7	1:44						
HNL-GUM	8/22/78	73	6:10		-52	FL351	2:06	22.0N	178.7W	FL338	-46.7	4.1	FL330	-43.7	.8	1:39						
HNL-GUM	11/ 8/76	75	6:14		-45	FL348	1:03	23.0N	169.9W	FL345	-40.5	2.7	FL310	-41.1	1.0	1:50						
HNL-GUM	11/12/76	75	6:05		-46	FL349	1:15	22.1N	171.9W	FL341	-41.7	3.7	FL348	-41.0	1.5	5:49						
HNL-GUM	12/ 3/76	70	6:16		-50	FL370	3:42	17.8N	167.1E	FL355	-46.0	3.3	FL349	-43.3	1.6	4:45						
													FL350	-45.5	.6	2:18						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-GUM	12/10/76	73	6:14	-50	FL370	4:34	18.0N	159.9E	FL344	-43.5	5.6	FL309	-37.0	2.2	1:54	FL349	-43.3	.8	1:19
HNL-GUM	12/28/78	83	6:48	-42	FL350	2:53	18.4N	176.8E	FL334	-37.9	4.1	FL370	-49.2	.5	2:34	FL350	-41.0	.6	4:04
HNL-GUM	12/30/78	72	6:24	-47	FL370	3:39	18.8N	168.5E	FL352	-41.7	5.1	FL309	-33.3	.9	2:23	FL349	-41.4	.8	1:45
HNL-HND	3/19/77	87	7:19	-56	FL351	2:24	28.5N	178.7W	FL354	-49.4	6.8	FL330	-34.9	.8	1:24	FL350	-52.2	3.2	3:34
HNL-HND	5/10/76	78	6:47	-58	FL384	6:02	32.1N	147.9E	FL343	-46.2	5.7	FL369	-46.9	.3	2:34	FL330	-43.7	.4	1:14
HNL-HND	5/12/76	84	7:00	-61	FL392	4:19	29.5N	162.9E	FL370	-51.9	5.6	FL310	-37.0	1.8	1:15	FL391	-57.3	1.9	3:11
HNL-HND	5/19/78	80	6:44	-51	FL346	2:34	29.2N	179.2E	FL346	-47.1	3.8	FL390	-53.3	.9	1:59	FL350	-48.3	1.5	2:09
HNL-HND	6/ 1/77	76	6:48	-56	FL391	5:00	36.9N	157.8E	FL358	-47.5	5.1	FL349	-46.8	.9	1:50	FL390	-54.8	1.1	1:33
HNL-HND	6/ 4/77	78	6:45	-58	FL388	3:04	28.6N	172.5E	FL373	-51.6	4.9	FL350	-46.2	1.0	1:29	FL389	-56.5	1.1	1:09
HNL-HND	6/19/77	78	6:31	-56	FL390	6:17	34.5N	143.0E	FL358	-48.2	5.8	FL391	-54.4	.8	2:39	FL370	-50.1	.5	1:35
HNL-HND	7/ 5/77	78	6:34	-49	FL350	1:45	26.7N	175.2W	FL341	-44.3	4.4	FL350	-47.7	1.2	2:24	FL350	-46.6	1.6	4:49
HNL-HND	7/16/77	77	6:21	-58	FL370	1:22	27.2N	170.7W	FL375	-53.1	4.5	FL310	-54.7	.7	1:18	FL370	-55.8	1.5	1:21
HNL-HND	8/26/77	73	6:09	-50	FL391	4:45	31.9N	155.9E	FL360	-45.2	4.1	FL390	-53.8	1.3	3:19	FL390	-49.3	.5	1:34
HNL-HND	11/14/76	81	6:51	-43	FL349	1:45	24.7N	176.4W	FL338	-39.5	4.2	FL350	-44.2	2.9	3:59	FL349	-41.9	.8	5:05
HNL-HND	12/ 5/76	87	7:53	-55	FL390	4:01	26.5N	168.0E	FL375	-51.0	2.8	FL308	-33.2	1.1	1:26	FL369	-52.1	1.7	2:04
HNL-HND	12/11/76	83	7:09	-51	FL350	7:09	34.1N	141.9E	FL337	-41.8	6.0	FL350	-48.9	.5	1:14	FL389	-51.7	1.9	3:44
HNL-HNL	11/ 3/76	29	2:19	-37	FL311	0:10	17.6N	158.8W	FL302	-33.2	2.2	FL309	-33.4	.7	2:05	FL350	-45.7	1.8	4:50
HNL-LAS	1/ 7/78	52	3:41	-53	FL331	3:21	36.0N	120.9W	FL322	-43.5	9.8	FL310	-34.9	.9	1:00	FL331	-48.3	5.5	2:31
HNL-LAS	4/22/77	51	4:15	-63	FL380	3:15	32.7N	126.7W	FL360	-55.2	7.0	FL339	-48.1	.7	1:15	FL380	-61.3	.8	2:14
HNL-LAS	5/12/76	47	4:03	-56	FL370	2:24	30.2N	136.1W	FL348	-49.9	5.8	FL330	-45.0	.7	1:48	FL369	-55.6	.6	1:48
HNL-LAS	11/ 9/78	52	4:19	-49	FL350	4:09	34.5N	118.3W	FL340	-45.3	1.8	FL340	-45.3	.8	3:54				
HNL-LAS	12/ 4/77	52	4:19	-48	FL340	3:49	33.7N	120.4W	FL337	-42.3	2.9	FL340	-42.7	1.9	3:44				
HNL-LAX	1/ 1/78	43	3:37	-57	FL380	3:22	31.9N	121.6W	FL373	-51.1	5.3	FL380	-52.6	1.8	3:13				
HNL-LAX	1/ 1/79	171	3:37	-59	FL371	3:27	33.0N	121.8W	FL369	-53.6	6.2	FL372	-56.9	1.1	2:04				
HNL-LAX	1/ 5/79	44	3:34	-61	FL370	3:29	33.1N	121.4W	FL367	-48.3	5.3	FL370	-49.2	3.9	3:19				
HNL-LAX	1/16/79	14	1:10	-53	FL316	1:10	32.7N	120.0W	FL339	-49.6	1.8	FL340	-49.3	1.6	1:04				
HNL-LAX	1/17/78	43	3:31	-52	FL382	3:26	33.7N	120.6W	FL367	-46.7	4.5	FL380	-49.4	1.3	2:22				
HNL-LAX	1/18/78	42	3:36	-54	FL400	2:21	30.8N	133.1W	FL392	-51.3	5.3	FL400	-52.9	.9	3:10				
HNL-LAX	1/23/78	50	4:04	-64	FL381	3:30	32.8N	125.8W	FL378	-59.7	5.4	FL381	-60.9	2.7	3:39				
HNL-LAX	1/23/79	45	3:39	-54	FL341	3:24	31.6N	122.2W	FL339	-42.3	6.9	FL340	-38.6	1.2	2:14	FL344	-51.0	3.2	1:09
HNL-LAX	1/27/76	49	4:04	-53	FL330	3:44	33.2N	123.5W	FL329	-45.3	4.6	FL330	-45.6	4.3	3:54				
HNL-LAX	1/27/78	51	3:54	-63	FL406	3:25	32.8N	125.8W	FL389	-53.5	7.0	FL380	-49.1	1.9	1:19	FL400	-56.4	2.1	1:30
HNL-LAX	1/28/77	24	3:22	-60	FL381	2:40	32.3N	127.7W	FL379	-54.2	3.2	FL381	-54.5	3.1	3:12				
HNL-LAX	1/31/78	45	3:45	-62	FL380	2:26	30.7N	133.6W	FL366	-47.7	8.9	FL380	-52.8	5.1	2:24				
HNL-LAX	1/31/79	45	3:44	-56	FL340	1:39	28.0N	141.4W	FL338	-52.6	4.0	FL339	-53.5	2.7	3:24				
HNL-LAX	2/ 3/76	52	4:07	-60	FL371	3:57	33.2N	121.3W	FL365	-50.4	5.4	FL369	-46.0	2.4	1:29	FL371	-54.4	2.7	2:11
HNL-LAX	2/ 4/78	46	3:40	-65	FL401	3:35	33.6N	121.0W	FL379	-49.2	8.8	FL360	-47.9	6.7	2:58				
HNL-LAX	2/ 5/76	47	4:09	-60	FL370	1:54	28.4N	141.2W	FL365	-52.3	6.7	FL370	-53.4	5.4	3:45				
HNL-LAX	2/ 7/78	40	3:29	-50	FL381	0:10	22.4N	153.9W	FL377	-47.4	3.0	FL380	-48.1	1.1	3:14				
HNL-LAX	2/ 8/78	40	3:22	-53	FL380	3:07	33.2N	123.7W	FL374	-48.7	4.5	FL380	-50.1	1.0	2:57				
HNL-LAX	2/ 8/79	48	3:47	-52	FL341	3:42	33.6N	120.8W	FL339	-49.5	3.1	FL341	-50.2	1.3	3:32				
HNL-LAX	2/ 9/76	46	3:57	-56	FL330	2:58	32.2N	129.0W	FL330	-50.0	3.5	FL330	-50.1	3.5	3:52				
HNL-LAX	2/10/79	44	3:33	-52	FL341	3:00	32.7N	126.1W	FL335	-46.7	4.8	FL341	-48.3	2.2	3:04				
HNL-LAX	2/11/76	43	4:03	-53	FL330	3:28	33.0N	125.5W	FL327	-47.0	3.8	FL330	-47.8	2.2	3:48				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM	
HNL-LAX	2/11/77	44	3:50		-65	FL383	3:30	33.2N	124.0W	FL380	-60.4	5.1	FL382	-61.3	3.4	3:34					
HNL-LAX	2/13/78	41	3:29		-55	FL381	2:39	31.9N	129.4W	FL377	-51.1	3.6	FL380	-51.9	1.4	3:09					
HNL-LAX	2/14/79	41	3:20		-53	FL343	3:20	33.8N	120.3W	FL372	-47.3	2.8	FL380	-47.5	2.0	2:30					
HNL-LAX	2/15/78	43	3:48		-66	FL380	2:44	31.4N	131.2W	FL357	-54.7	8.7	FL340	-48.3	6.4	1:49	FL380	-62.5	1.9	1:35	
HNL-LAX	2/19/78	60	4:03		-66	FL391	2:17	29.8N	136.4W	FL385	-58.5	4.6	FL390	-59.6	2.7	3:38					
HNL-LAX	2/23/78	46	3:52		-57	FL341	2:52	31.6N	130.3W	FL339	-46.8	10.2	FL341	-48.0	9.4	3:37					
HNL-LAX	2/27/78	50	3:44		-62	FL370	3:05	32.3N	128.0W	FL365	-58.1	5.1	FL369	-59.6	1.9	3:28					
HNL-LAX	3/1/78	70	3:31		-49	FL381	2:47	32.4N	127.5W	FL359	-43.1	4.1	FL340	-39.4	2.0	2:16					
HNL-LAX	3/6/76	46	3:49		-64	FL370	2:45	31.8N	131.0W	FL361	-56.0	6.2	FL369	-58.2	1.8	3:19					
HNL-LAX	3/6/79	47	4:03		-58	FL360	3:39	32.5N	123.5W	FL357	-46.4	5.5	FL360	-47.1	4.8	3:48					
HNL-LAX	3/7/78	46	3:50		-55	FL343	3:39	31.7N	121.0W	FL338	-51.0	3.5	FL339	-51.4	2.4	3:24					
HNL-LAX	3/11/78	46	4:04		-64	FL380	3:19	32.2N	128.3W	FL355	-54.6	5.6	FL340	-51.0	1.7	2:09	FL380	-60.9	2.2	1:29	
HNL-LAX	3/12/79	47	4:01		-58	FL361	1:54	27.8N	139.3W	FL357	-54.6	3.8	FL360	-55.3	2.0	3:45					
HNL-LAX	3/15/79	47	4:00		-62	FL394	2:39	28.9N	132.3W	FL358	-56.2	4.3	FL370	-58.9	1.1	1:20					
HNL-LAX	3/16/79	204	3:59		-64	FL382	2:37	29.8N	133.1W	FL380	-55.8	6.3	FL381	-56.2	6.0	3:31					
HNL-LAX	3/19/79	184	4:01		-61	FL381	2:46	30.2N	131.7W	FL379	-51.3	4.6	FL381	-51.8	4.5	0:01					
HNL-LAX	3/20/78	44	3:40		-57	FL381	3:34	33.7N	120.7W	FL376	-49.4	4.0	FL380	-49.8	3.9	3:19					
HNL-LAX	3/21/79	45	3:59		-55	FL380	3:19	32.0N	126.7W	FL368	-50.9	2.6	FL360	-49.7	1.6	1:42	FL380	-52.7	1.5	1:56	
HNL-LAX	3/25/77	55	4:04		-60	FL371	2:25	29.1N	135.3W	FL360	-51.6	5.7	FL370	-53.4	4.4	2:03					
HNL-LAX	3/27/79	44	4:04		-58	FL360	1:34	26.6N	142.3W	FL356	-34.6	3.8	FL360	-55.6	1.5	3:41					
HNL-LAX	3/30/78	46	3:45		-62	FL380	1:49	29.1N	138.3W	FL378	-52.6	5.4	FL380	-53.2	5.1	3:30					
HNL-LAX	4/1/79	50	3:58		-61	FL381	2:08	28.5N	137.3W	FL366	-56.0	5.4	FL360	-54.7	.8	1:45	FL380	-60.0	.9	1:49	
HNL-LAX	4/3/76	43	3:37		-62	FL370	2:45	31.2N	133.4W	FL367	-58.1	4.1	FL370	-58.9	2.4	3:22					
HNL-LAX	4/4/76	43	3:45		-59	FL391	2:24	27.7N	133.5W	FL383	-54.5	4.8	FL390	-56.1	2.0	3:20					
HNL-LAX	4/8/76	45	3:45		-61	FL370	2:45	31.9N	130.4W	FL364	-55.3	6.6	FL369	-57.1	2.7	3:24					
HNL-LAX	4/8/78	47	4:00		-47	FL330	1:39	27.3N	140.6W	FL328	-45.0	2.3	FL330	-45.5	1.2	3:45					
HNL-LAX	4/9/78	45	4:05		-57	FL370	0:20	21.7N	153.2W	FL366	-53.6	4.2	FL370	-54.4	2.1	3:45					
HNL-LAX	4/12/78	48	3:56		-60	FL380	0:25	22.9N	152.8W	FL375	-55.0	5.2	FL379	-56.0	3.1	3:41					
HNL-LAX	4/13/75	39	3:45		-67	FL411	3:30	33.1N	124.2W	FL383	-60.1	4.9	FL370	-57.3	.4	2:19					
HNL-LAX	4/17/76	48	3:55		-57	FL370	2:11	29.9N	137.3W	FL366	-54.1	3.6	FL369	-54.9	1.8	3:36					
HNL-LAX	4/20/77	44	3:34		-62	FL380	2:44	32.1N	128.7W	FL376	-57.1	5.4	FL379	-58.1	3.0	3:14					
HNL-LAX	4/24/77	41	3:39		-54	FL340	3:19	33.1N	124.3W	FL339	-48.5	3.7	FL340	-49.1	2.4	3:24					
HNL-LAX	4/26/77	42	3:40		-55	FL380	0:30	23.5N	151.6W	FL374	-52.7	4.2	FL379	-53.7	.9	3:15					
HNL-LAX	4/26/78	43	3:45		-58	FL380	2:45	31.7N	130.2W	FL351	-51.1	3.9	FL340	-49.0	1.0	2:25					
HNL-LAX	4/28/78	51	4:24		-58	FL370	4:09	33.2N	122.8W	FL367	-55.5	3.6	FL370	-56.4	1.3	4:05					
HNL-LAX	4/30/78	48	3:59		-52	FL341	3:59	33.7N	120.6W	FL339	-47.9	2.9	FL340	-48.4	1.5	3:49					
HNL-LAX	5/5/76	25	2:54		-60	FL370	2:24	31.2N	124.2W	FL370	-57.0	1.5	FL369	-57.0	1.5	2:54					
HNL-LAX	5/6/77	43	3:49		-59	FL371	2:19	29.2N	135.2W	FL366	-52.9	5.3	FL370	-53.9	3.6	3:34					
HNL-LAX	5/7/77	17	2:05		-59	FL380	0:00	28.4N	140.1W	FL377	-51.1	5.8	FL380	-51.1	6.0	2:00					
HNL-LAX	5/10/76	51	4:13		-60	FL407	3:43	33.9N	125.1W	FL372	-52.5	5.6	FL369	-52.6	2.7	2:53					
HNL-LAX	5/11/78	47	4:00		-55	FL380	2:15	29.7N	136.5W	FL357	-49.9	4.4	FL339	-46.3	.6	1:54	FL379	-54.7	.5	1:45	
HNL-LAX	5/12/77	53	3:54		-62	FL381	2:49	31.6N	130.5W	FL374	-55.5	6.3	FL380	-57.1	3.7	3:30					
HNL-LAX	5/12/78	47	3:49		-48	FL341	0:19	23.0N	152.7W	FL340	-46.7	1.7	FL340	-47.0	.8	3:44					
HNL-LAX	5/13/75	50	4:09		-55	FL370	2:19	29.5N	138.6W	FL347	-48.8	5.6	FL330	-45.0	.5	1:55	FL370	-54.3	.8	1:50	
HNL-LAX	5/13/77	27	2:15		-60	FL381	1:20	32.1N	128.7W	FL376	-57.9	4.2	FL380	-58.9	.7	2:05					
HNL-LAX	5/18/79	51	4:08		-58	FL381	4:04	33.6N	120.1W	FL357	-50.6	5.0	FL360	-51.1	.9	2:09					
HNL-LAX	5/19/78	43	3:44		-53	FL340	2:34	31.3N	131.4W	FL339	-48.5	2.8	FL339	-48.8	2.1	3:39					
HNL-LAX	5/28/76	38	3:24		-62	FL380	2:49	32.6N	126.5W	FL380	-59.1	1.9	FL380	-59.1	1.9	3:19					
HNL-LAX	5/31/78	44	3:49		-51	FL340	3:44	33.7N	120.8W	FL337	-46.8	4.1	FL340	-47.8	1.4	3:33					
HNL-LAX	6/2/78	45	3:44		-49	FL340	2:19	30.1N	135.2W	FL339	-47.3	2.4	FL340	-47.8	.7	3:34					
HNL-LAX	6/2/79	48	3:55		-56	FL380	3:10	31.6N	126.4W	FL361	-50.0	4.2	FL360	-49.8	1.2	2:45					
HNL-LAX	6/3/78	45	3:44		-48	FL340	0:44	24.7N	149.1W	FL338	-47.1	2.6	FL340	-47.6	.5	3:34					
HNL-LAX	6/4/79	52	4:14		-58	FL381	1:15	25.3N	145.4W	FL376	-54.8	4.5	FL380	-55.9	1.1	3:54					

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-LAX	6/ 7/77	46	3:49	-56	FL381	2:09	29.8N	136.6W	FL358	-50.4	4.2	FL340	-47.6	1.8	1:54	FL380	-54.3	1.5	1:39
HNL-LAX	6/ 9/78	48	3:46	-48	FL341	2:11	30.1N	135.4W	FL337	-45.6	4.1	FL341	-46.7	1.5	3:30				
HNL-LAX	6/ 9/79	46	3:45	-54	FL360	3:39	33.2N	121.4W	FL356	-50.7	3.7	FL359	-51.6	.9	3:24				
HNL-LAX	6/11/77	46	3:54	-60	FL380	2:39	30.9N	132.7W	FL377	-55.0	3.7	FL380	-55.8	2.0	3:34				
HNL-LAX	6/13/77	42	3:40	-55	FL371	0:09	21.7N	153.3W	FL370	-53.6	1.7	FL370	-53.8	1.3	3:35				
HNL-LAX	6/16/75	47	3:52	-49	FL331	1:30	27.4N	143.2W	FL329	-43.0	3.2	FL330	-43.5	2.2	3:39				
HNL-LAX	6/16/79	45	3:39	-58	FL380	0:39	23.6N	149.4W	FL374	-54.2	3.5	FL380	-55.3	1.8	2:54				
HNL-LAX	6/17/79	46	3:45	-52	FL361	0:30	23.0N	150.6W	FL358	-50.3	3.1	FL360	-51.0	.8	3:30				
HNL-LAX	6/20/79	48	3:54	-67	FL410	1:29	27.3N	143.2W	FL404	-60.0	5.9	FL409	-61.4	3.4	3:30				
HNL-LAX	6/21/77	47	4:04	-47	FL341	0:09	22.6N	153.4W	FL339	-45.9	2.6	FL340	-46.5	.5	3:50				
HNL-LAX	6/22/75	46	3:45	-56	FL370	2:37	31.5N	132.1W	FL368	-53.7	2.6	FL370	-54.3	1.0	3:30				
HNL-LAX	6/22/77	51	4:18	-56	FL370	2:03	27.7N	139.7W	FL366	-52.7	4.8	FL370	-53.8	1.1	4:03				
HNL-LAX	6/22/78	43	3:40	-56	FL371	2:05	29.0N	135.5W	FL364	-52.2	5.7	FL370	-54.1	1.6	3:14				
HNL-LAX	6/22/78	48	3:42	-60	FL380	2:12	30.2N	135.1W	FL355	-52.5	6.1	FL340	-49.3	2.1	1:47	FL380	-58.6	1.6	1:29
HNL-LAX	6/28/77	35	3:09	-55	FL370	0:30	25.6N	144.8W	FL369	-49.9	3.4	FL370	-50.3	2.4	3:04				
HNL-LAX	6/30/77	46	3:45	-55	FL383	1:39	28.4N	140.4W	FL366	-48.0	5.1	FL341	-45.4	1.0	1:20	FL382	-50.6	2.9	1:05
HNL-LAX	6/30/78	43	3:35	-48	FL341	2:20	30.7N	133.5W	FL338	-44.3	3.6	FL340	-45.0	2.0	3:20				
HNL-LAX	7/ 2/77	47	3:54	-48	FL341	2:30	30.6N	134.0W	FL340	-45.6	2.0	FL340	-45.7	1.9	3:49				
HNL-LAX	7/ 2/77	46	3:54	-52	FL370	0:15	22.0N	152.8W	FL366	-48.9	4.6	FL370	-49.8	2.3	3:34				
HNL-LAX	7/ 2/78	43	3:30	-56	FL381	2:19	30.7N	133.4W	FL356	-49.0	4.8	FL340	-46.0	0.0	1:45	FL380	-53.8	1.9	1:25
HNL-LAX	7/ 2/79	45	3:39	-58	FL380	2:45	31.1N	128.8W	FL369	-51.7	6.1	FL361	-48.8	.9	1:05	FL380	-55.1	2.0	2:10
HNL-LAX	7/ 3/79	44	3:34	-58	FL380	3:25	32.8N	122.2W	FL368	-51.5	5.4	FL380	-54.3	1.6	2:04				
HNL-LAX	7/ 4/77	46	4:00	-51	FL341	2:00	29.0N	138.7W	FL339	-48.1	3.3	FL340	-48.7	2.1	3:50				
HNL-LAX	7/ 4/77	50	4:04	-57	FL380	2:49	31.3N	131.6W	FL357	-49.8	6.1	FL340	-45.9	1.4	1:49	FL380	-55.5	1.6	1:49
HNL-LAX	7/ 5/78	46	3:45	-51	FL370	0:15	21.8N	152.9W	FL367	-49.5	3.3	FL370	-50.2	.5	3:30				
HNL-LAX	7/ 6/78	47	3:49	-43	FL330	0:30	22.8N	151.0W	FL329	-41.3	1.8	FL330	-41.6	.9	3:39				
HNL-LAX	7/ 7/77	44	3:52	-57	FL380	1:16	26.6N	144.9W	FL377	-52.8	3.1	FL380	-53.4	2.1	3:31				
HNL-LAX	7/ 7/78	47	3:50	-52	FL371	0:45	23.8N	148.8W	FL368	-49.4	3.0	FL370	-50.0	.9	3:35				
HNL-LAX	7/ 7/79	44	3:34	-55	FL381	2:09	29.4N	134.6W	FL367	-50.6	6.1	FL360	-48.7	1.1	1:09	FL380	-54.5	.7	1:49
HNL-LAX	7/ 8/77	46	3:52	-55	FL391	3:12	31.6N	126.5W	FL348	-47.1	5.1	FL330	-44.6	1.6	2:22				
HNL-LAX	7/ 8/79	46	3:45	-50	FL361	2:20	29.4N	134.7W	FL356	-46.7	4.7	FL360	-47.9	1.4	3:23				
HNL-LAX	7/ 8/79	43	3:29	-49	FL361	1:49	28.1N	138.2W	FL356	-45.7	4.3	F. 60	-46.9	1.4	3:09				
HNL-LAX	7/10/78	47	3:49	-45	FL341	0:30	23.6N	151.4W	FL339	-42.2	2.6	FL340	-42.6	1.3	3:39				
HNL-LAX	7/12/77	48	4:04	-56	FL380	1:04	25.7N	147.0W	FL375	-52.7	4.2	FL379	-53.8	1.2	3:44				
HNL-LAX	7/12/79	49	4:00	-49	FL360	3:55	33.3N	120.9W	FL355	-45.3	4.6	FL360	-46.7	.8	3:30				
HNL-LAX	7/17/77	46	4:09	-57	FL379	0:15	22.3N	154.0W	FL376	-51.2	4.9	FL379	-52.1	3.0	3:49				
HNL-LAX	7/17/78	47	3:49	-45	FL341	1:04	26.0N	146.1W	FL339	-42.5	2.6	FL340	-43.1	1.3	3:34				
HNL-LAX	7/18/77	40	3:44	-47	FL341	0:00	22.5N	153.7W	FL340	-45.7	1.3	FL340	-45.7	1.3	3:44				
HNL-LAX	7/19/78	48	3:55	-52	FL380	3:49	33.7N	120.9W	FL365	-47.2	4.7	FL360	-46.0	.6	1:45	FL380	-50.9	.5	1:39
HNL-LAX	7/20/77	47	3:54	-56	FL380	3:44	33.8N	121.9W	FL373	-51.8	5.8	FL380	-53.3	1.9	3:34				
HNL-LAX	7/20/77	47	3:49	-54	FL370	3:30	32.6N	123.2W	FL365	-48.9	4.0	FL369	-50.0	1.9	3:25				
HNL-LAX	7/22/77	40	3:49	-55	FL379	0:49	23.2N	147.8W	FL375	-50.7	3.8	FL379	-51.7	1.5	3:29				
HNL-LAX	7/22/77	45	3:54	-56	FL380	0:40	24.5N	149.6W	FL377	-53.2	3.0	FL380	-53.8	1.4	3:34				
HNL-LAX	7/23/78	37	2:59	-50	FL371	0:04	24.8N	146.5W	FL370	-48.8	1.2	FL370	-48.9	.8	2:54				
HNL-LAX	7/24/77	42	3:47	-51	FL342	1:45	28.3N	140.5W	FL340	-48.0	3.1	FL341	-48.6	1.6	3:37				
HNL-LAX	7/24/77	47	4:00	-57	FL379	1:24	27.2N	143.4W	FL374	-53.8	5.4	FL378	-55.3	1.4	3:30				
HNL-LAX	7/25/75	48	4:00	-59	FL411	2:30	28.9N	134.2W	FL384	-53.4	4.1	FL370	-51.0	1.3	2:15	FL411	-58.4	.5	1:20
HNL-LAX	7/25/78	46	3:48	-39	FL320	1:35	27.7N	142.2W	FL314	-35.9	3.6	FL320	-38.0	1.1	2:38				
HNL-LAX	7/26/78	48	3:54	-51	FL371	0:34	23.1N	150.2W	FL366	-48.7	4.7	FL370	-49.9	.9	3:34				
HNL-LAX	7/30/77	44	3:49	-50	FL360	2:19	30.4N	134.4W	FL346	-46.8	2.8	FL339	-46.8	1.3	2:04	FL359	-48.2	.9	1:24
HNL-LAX	8/ 1/77	44	3:49	-53	FL370	2:15	29.3N	134.9W	FL365	-49.7	4.3	FL369	-50.9	1.4	3:30				
HNL-LAX	8/ 3/77	46	3:50	-48	FL340	1:00	25.6N	147.2W	FL338	-45.9	3.0	FL340	-46.6	1.5	3:29				
HNL-LAX	8/ 4/78	47	3:49	-46	FL340	0:44	24.7N	148.9W	FL338	-44.3	2.6	FL340	-44.7	1.2	3:39				





APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-LAX	12/19/77	41	3:25	-61	FL380	2:20	31.0N	132.5W	FL374	-53.2	7.4	FL380	-55.0	5.5	3:00				
HNL-LAX	12/23/76	49	4:00	-62	FL380	2:15	29.5N	137.3W	FL376	-57.0	5.1	FL380	-58.0	3.0	3:39				
HNL-LAX	12/24/76	53	4:25	-45	FL300	4:05	33.2N	123.3W	FL300	-41.5	2.2	FL300	-41.5	2.2	4:25				
HNL-LAX	12/24/77	45	3:45	-57	FL399	2:45	31.5N	131.0W	FL389	-47.5	6.2	FL400	-49.2	3.7	3:08				
HNL-LAX	12/25/77	46	3:45	-56	FL380	3:24	33.0N	124.5W	FL376	-46.9	5.0	FL380	-47.6	4.3	3:24				
HNL-LAX	12/26/76	50	4:02	-54	FL340	2:49	31.2N	131.6W	FL337	-50.0	4.1	FL340	-50.9	1.7	3:47				
HNL-LAX	12/26/77	44	3:35	-52	FL370	0:50	24.1N	147.4W	FL367	-45.3	4.2	FL370	-45.6	3.8	3:15				
HNL-LAX	12/30/76	47	4:09	-60	FL341	4:04	33.6N	121.4W	FL338	-54.0	4.2	FL340	-54.7	2.6	4:00				
HNL-LAX	12/30/77	43	3:39	-55	FL370	2:49	31.0N	128.9W	FL369	-50.2	3.8	FL370	-50.8	3.0	3:24				
HNL-LAX	12/31/75	46	4:03	-61	FL370	2:00	30.0N	142.1W	FL367	-58.3	4.8	FL369	-59.2	1.3	3:52				
HNL-LAX	12/31/77	42	3:30	-56	FL370	3:24	33.0N	121.6W	FL367	-48.7	4.2	FL370	-49.7	2.8	3:10				
HNL-NAN	1/ 6/77	55	5:00	-32	FL310	3:10	4.3S	173.4W	FL293	-27.5	3.2	FL280	-25.0	1.4	2:34	FL310	-31.0	.6	2:14
HNL-NAN	1/ 8/78	53	4:53	-43	FL351	1:38	6.5N	166.1W	FL340	-39.6	4.6	FL310	-32.1	.3	1:23	FL350	-42.3	.5	3:15
HNL-NAN	1/14/77	60	4:59	-42	FL350	1:54	4.9N	167.9W	FL335	-37.6	4.4	FL310	-32.4	.5	1:40	FL350	-41.0	.8	3:04
HNL-NAN	1/19/78	63	5:14	-44	FL350	4:59	14.5S	179.7E	FL343	-40.4	3.6	FL350	-42.1	.7	4:14				
HNL-NAN	1/29/78	61	5:08	-40	FL351	3:48	7.6S	175.6W	FL325	-32.9	5.4	FL310	-29.1	.9	3:00	FL350	-39.7	.4	1:49
HNL-NAN	2/ 5/78	57	4:49	-42	FL351	2:44	1.5S	171.9W	FL333	-36.8	5.3	FL309	-31.1	.7	1:45	FL350	-41.2	.4	2:44
HNL-NAN	2/12/77	58	4:54	-42	FL350	1:24	8.3N	165.7W	FL340	-38.9	3.3	FL310	-33.7	1.5	1:04	FL349	-40.7	.6	3:30
HNL-NAN	2/20/77	59	4:59	-43	FL350	1:15	10.0N	164.6W	FL349	-41.7	1.4	FL349	-41.9	.6	4:49				
HNL-NAN	3/15/77	63	5:13	-43	FL350	4:37	12.8S	179.0W	FL342	-38.8	4.2	FL350	-40.8	.9	4:02				
HNL-NAN	3/20/77	69	5:22	-43	FL350	1:45	8.0N	165.9W	FL347	-41.3	2.9	FL349	-41.9	.6	5:02				
HNL-NAN	3/22/77	66	5:17	-43	FL350	2:34	2.6N	169.4W	FL349	-41.3	1.3	FL350	-41.5	.8	5:07				
HNL-NAN	4/14/77	62	5:04	-32	FL311	1:51	5.9N	167.3W	FL300	-29.2	3.5	FL280	-25.1	2.7	1:45	FL310	-31.5	.5	3:13
HNL-NAN	4/19/77	63	5:14	-43	FL351	3:00	.6S	171.4W	FL340	-39.7	3.5	FL310	-34.0	2.4	1:04	FL350	-41.5	.7	3:54
HNL-NAN	4/27/78	60	5:14	-55	FL391	4:04	8.9S	176.6W	FL365	-47.5	4.9	FL350	-43.6	.7	3:04	FL390	-54.6	.5	1:20
HNL-NAN	5/ 1/77	61	5:14	-44	FL351	1:04	11.9N	163.4W	FL343	-41.8	2.6	FL350	-43.0	.6	4:09				
HNL-NAN	5/ 5/77	63	5:09	-45	FL350	5:09	16.4S	178.4E	FL332	-39.3	4.9	FL310	-34.0	.9	2:10	FL350	-43.7	.5	2:45
HNL-NAN	6/ 1/79	63	5:09	-50	FL370	3:54	8.0S	176.2W	FL347	-42.8	5.4	FL350	-43.0	.7	1:39	FL370	-48.8	.5	1:29
HNL-NAN	6/19/77	57	4:59	-43	FL350	2:00	4.7N	168.2W	FL335	-38.7	4.8	FL309	-32.5	.7	1:35	FL349	-42.4	.5	3:04
HNL-NAN	7/10/77	58	5:00	-43	FL350	4:34	13.7S	179.8W	FL337	-38.5	4.6	FL310	-32.0	.9	1:15	FL350	-41.5	.8	3:29
HNL-NAN	7/21/77	59	5:01	-45	FL351	3:29	6.3S	174.9W	FL332	-39.2	5.9	FL310	-33.2	.7	2:09	FL350	-44.3	.5	2:31
HNL-NAN	7/23/77	58	4:51	-45	FL351	3:56	10.5S	177.1W	FL330	-38.5	5.5	FL310	-33.2	.4	2:19	FL350	-44.0	.5	2:16
HNL-NAN	8/ 4/78	62	5:08	-46	FL350	0:15	17.3N	160.1W	FL348	-43.9	2.7	FL350	-44.5	.6	4:48				
HNL-NAN	8/20/76	61	5:04	-42	FL349	4:34	13.1S	179.3W	FL336	-38.1	4.9	FL309	-31.9	1.1	1:10	FL349	-41.0	.5	3:35
HNL-NAN	8/28/76	59	4:48	-37	FL349	4:23	13.6S	179.4W	FL332	-31.7	4.6	FL309	-26.5	2.2	1:45	FL348	-35.3	.9	2:41
HNL-NAN	9/ 8/78	62	5:04	-51	FL370	4:19	11.5S	178.5W	FL346	-43.8	5.0	FL330	-39.0	.4	1:04	FL349	-44.9	.5	2:15
HNL-NAN	9/ 9/77	57	4:49	-43	FL350	3:19	5.2S	174.3W	FL324	-35.5	5.3	FL310	-32.1	.8	2:49	FL350	-42.3	.6	1:34
HNL-NAN	9/11/77	52	4:34	-44	FL350	2:49	3.0S	172.9W	FL327	-36.9	5.2	FL309	-32.4	.7	2:30	FL350	-43.0	.6	1:55
HNL-NAN	9/13/77	59	5:05	-45	FL350	2:26	1.5N	170.1W	FL334	-40.3	5.3	FL310	-34.2	.4	1:40	FL349	-44.2	.5	3:10
HNL-NAN	9/30/77	58	4:59	-45	FL351	4:54	15.8S	178.8E	FL337	-39.9	5.4	FL309	-32.2	.6	1:30	FL350	-43.6	.6	3:14
HNL-NAN	10/ 2/77	33	5:04	-44	FL350	4:49	14.5S	179.5E	FL334	-39.0	5.4	FL310	-33.0	.9	1:24	FL349	-43.0	.4	3:04
HNL-NAN	10/ 4/76	59	5:03	-46	FL350	3:49	8.2S	176.2W	FL326	-38.7	5.5	FL310	-34.3	.8	2:45	FL350	-45.0	.8	1:57
HNL-NAN	10/ 4/77	61	5:01	-44	FL350	1:27	8.2N	165.7W	FL339	-39.9	4.5	FL310	-33.5	.5	1:09	FL350	-42.6	.8	3:31
HNL-NAN	10/14/76	63	5:02	-45	FL351	4:44	14.4S	179.9E	FL322	-36.5	4.9	FL310	-33.5	.6	3:19	FL350	-44.0	.7	0:00
HNL-NAN	10/22/76	61	5:12	-46	FL350	5:07	15.9S	178.8E	FL333	-39.8	5.2	FL310	-33.8	.8	1:48	FL350	-44.1	.9	3:04
HNL-NAN	10/30/76	63	5:19	-34	FL310	2:34	1.9N	169.7W	FL302	-30.7	2.4	FL310	-32.3	.8	3:30				
HNL-NAN	11/19/76	63	5:15	-45	FL350	5:15	16.5S	178.4E	FL337	-40.0	5.5	FL349	-42.6	.7	4:09				
HNL-NAN	11/27/76	60	5:04	-44	FL350	4:30	12.8S	179.2W	FL332	-38.9	4.4	FL309	-34.3	2.4	2:10	FL349	-42.6	.6	2:44
HNL-NAN	12/ 3/76	62	5:04	-33	FL310	4:59	16.1S	178.8E	FL296	-28.6	3.0	FL280	-25.6	1.4	2:15	FL309	-31.2	.6	2:34
HNL-NAN	12/14/76	63	4:53	-43	FL350	2:44	1.4S	171.8W	FL339	-39.0	4.2	FL310	-32.1	.6	1:15	FL350	-41.5	.6	3:23
HNL-NAN	12/15/77	59	4:54	-33	FL312	0:08	16.8N	160.1W	FL309	-30.0	1.3	FL310	-30.2	.8	4:45				
HNL-NAN	12/16/76	64	5:16	-34	FL310	2:05	4.2N	168.3W	FL301	-29.8	2.6	FL280	-26.2	1.0	1:34	FL310	-31.4	.8	3:36

APPENDIX B  
FLIGHT SUMMARY

--- LIGHT DATA ---				--- COLDEST OBSERVATION ---				--- MEAN ---			--- FLIGHT SEGMENTS ---								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-NAN	12/23/76	57	4:51	-45	FL350	4:41	15.1S	179.3E	FL330	-38.9	4.9	FL309	-34.2	.9	2:00	FL349	-43.7	.7	2:26
HNL-NAN	12/24/76	61	5:04	-45	FL350	0:10	17.8N	159.4W	FL349	-42.1	1.6	FL350	-42.3	1.0	4:54				
HNL-NAN	12/25/76	60	5:07	-50	FL350	0:10	18.0N	159.6W	FL358	-47.0	2.8	FL350	-45.2	1.5	2:34	FL369	-49.3	.5	2:13
HNL-NAN	12/26/76	63	5:11	-47	FL350	0:10	18.3N	159.0W	FL348	-42.1	2.9	FL350	-42.6	1.7	4:56				
HNL-NQU	1/27/78	100	8:19	-49	FL370	7:24	26.3S	162.1E	FL332	-36.7	8.0	FL309	-29.7	.5	2:50	FL360	-45.8	.4	1:30
HNL-NRT	1/3/79	93	7:47	-48	FL350	7:32	34.3N	143.5E	FL336	-38.6	5.4	FL309	-30.1	.8	1:34	FL329	-35.9	.6	1:15
HNL-NRT	2/12/79	86	7:15	-61	FL351	3:50	34.7N	171.2E	FL336	-51.6	7.2	FL349	-42.6	1.7	4:32				
HNL-NRT	2/21/79	96	7:54	-58	FL351	5:54	35.0N	159.6E	FL340	-51.5	4.9	FL330	-51.5	2.6	2:24	FL350	-56.3	2.9	3:30
HNL-NRT	3/13/79	91	7:30	-55	FL350	0:45	25.2N	165.4W	FL371	-48.4	4.4	FL330	-48.4	.6	2:24	FL350	-54.8	2.7	4:34
HNL-NRT	4/22/79	88	7:15	-54	FL350	6:20	33.5N	148.8E	FL342	-45.2	5.1	FL350	-53.2	1.8	3:00	FL390	-45.2	1.6	3:59
HNL-NRT	5/10/79	86	7:04	-50	FL351	2:39	27.5N	178.0E	FL342	-45.5	3.4	FL310	-38.1	.7	1:09	FL350	-47.2	3.4	5:45
HNL-NRT	6/3/79	81	6:39	-56	FL390	4:54	31.2N	156.3E	FL375	-51.2	4.0	FL331	-43.4	.6	2:20	FL351	-47.4	1.4	4:20
HNL-NRT	6/4/78	77	6:18	-38	FL311	1:14	25.7N	172.1W	FL310	-34.0	2.8	FL370	-49.2	.4	2:09	FL390	-54.7	.8	3:09
HNL-NRT	6/23/78	75	6:12	-49	FL348	2:27	29.1N	179.0E	FL335	-43.0	4.0	FL310	-34.1	2.8	6:13				
HNL-NRT	7/7/78	76	6:14	-55	FL390	4:44	34.3N	157.7E	FL366	-50.6	3.6	FL310	-38.6	1.0	2:12	FL351	-45.8	1.5	3:44
HNL-NRT	10/14/78	82	6:53	-51	FL370	4:09	28.5N	162.8E	FL350	-46.0	4.1	FL349	-48.4	.9	2:19	FL369	-52.4	.7	1:54
HNL-ORD	1/10/79	83	6:05	-61	FL369	3:11	43.0N	127.1W	FL342	-50.4	7.2	FL390	-53.2	1.5	1:30	FL350	-46.2	1.1	1:30
HNL-ORD	1/16/78	68	5:54	-57	FL346	5:54	42.5N	90.0W	FL354	-42.4	5.2	FL329	-41.7	.7	2:00				
HNL-ORD	1/22/78	78	6:49	-59	FL357	3:24	35.4N	127.7W	FL349	-50.2	3.3	FL370	-50.1	.7	2:48	FL370	-59.9	.6	1:14
HNL-ORD	1/28/79	81	6:35	-56	FL340	3:14	30.9N	126.1W	FL342	-47.2	4.6	FL290	-41.3	1.2	1:09	FL370	-53.0	1.7	1:04
HNL-ORD	2/9/79	78	6:19	-63	FL371	4:14	39.1N	115.2W	FL349	-53.1	7.6	FL329	-38.9	2.4	2:45	FL369	-44.0	2.5	1:05
HNL-ORD	2/16/79	76	6:14	-57	FL360	3:54	35.6N	116.7W	FL327	-49.3	5.7	FL390	-47.3	3.7	1:34				
HNL-ORD	2/18/78	83	6:56	-67	FL371	4:01	44.1N	122.7W	FL348	-56.5	5.3	FL330	-49.1	3.1	3:10	FL369	-51.5	1.4	3:20
HNL-ORD	2/22/78	82	6:41	-67	FL371	5:14	40.6N	106.6W	FL352	-54.6	9.0	FL300	-42.5	.6	1:09	FL340	-52.2	2.4	2:19
HNL-ORD	3/2/76	76	6:13	-53	FL335	2:44	34.4N	130.9W	FL330	-48.3	4.5	FL369	-44.8	1.2	2:13				
HNL-ORD	3/3/78	68	5:45	-50	FL371	4:30	41.0N	106.3W	FL347	-43.7	4.1	FL331	-47.9	3.2	2:49	FL371	-59.7	2.7	3:00
HNL-ORD	3/5/76	78	6:28	-54	FL330	3:23	36.3N	124.7W	FL346	-49.4	3.3	FL300	-45.7	4.4	3:14	FL369	-54.2	.8	2:04
HNL-ORD	3/14/78	80	6:30	-57	FL371	5:45	42.3N	98.5W	FL327	-46.1	6.8	FL330	-53.4	1.7	3:30	FL370	-60.8	4.4	3:00
HNL-ORD	3/15/78	77	6:34	-61	FL371	4:04	38.9N	118.5W	FL353	-51.9	4.5	FL332	-48.7	5.9	2:49	FL371	-60.7	4.0	3:22
HNL-ORD	3/19/78	86	6:27	-62	FL371	4:57	38.5N	107.7W	FL352	-52.7	7.0	FL332	-49.1	3.3	5:51				
HNL-ORD	3/23/79	77	7:00	-59	FL353	6:52	41.0N	91.3W	FL344	-47.5	3.4	FL330	-42.9	2.5	2:49	FL369	-45.6	3.1	2:26
HNL-ORD	3/30/76	83	6:45	-63	FL370	4:25	39.5N	115.6W	FL335	-49.0	7.4	FL330	-42.9	2.5	2:49	FL369	-49.2	2.2	2:45
HNL-ORD	4/1/76	82	6:56	-60	FL370	5:51	41.5N	101.8W	FL349	-51.9	3.9	FL291	-38.6	.5	2:35	FL330	-50.7	1.9	1:09
HNL-ORD	4/2/78	82	6:49	-63	FL370	6:39	42.1N	91.1W	FL349	-53.3	4.5	FL370	-52.5	2.6	2:11				
HNL-ORD	4/6/78	103	6:47	-65	FL391	5:27	38.9N	104.8W	FL363	-56.3	5.7	FL340	-50.2	1.4	1:07	FL370	-52.6	6.0	2:59
HNL-ORD	4/6/79	244	6:59	-67	FL390	5:30	41.3N	106.0W	FL373	-60.0	5.6	FL370	-59.5	1.9	2:56	FL340	-46.2	4.9	1:56
HNL-ORD	4/7/78	83	6:50	-61	FL370	6:45	41.2N	90.6W	FL353	-52.8	5.0	FL310	-44.4	1.0	1:55	FL350	-47.0	2.0	2:09
HNL-ORD	4/10/76	78	6:39	-60	FL370	3:59	38.3N	118.9W	FL353	-51.4	6.2	FL370	-49.7	2.2	2:15				
HNL-ORD	4/12/76	47	3:45	-65	FL390	2:19	41.2N	107.0W	FL376	-56.4	5.7	FL290	-41.5	.7	1:49	FL330	-52.3	.4	1:30
HNL-ORD	4/12/78	77	6:33	-59	FL371	3:58	37.7N	119.6W	FL323	-49.1	4.7	FL370	-52.2	8.4	2:49				
HNL-ORD	4/14/76	80	6:54	-61	FL384	5:54	39.0N	100.4W	FL348	-48.0	6.6	FL330	-50.0	.6	3:14	FL369	-54.1	3.8	3:11
												FL331	-51.2	2.1	3:04	FL370	-56.2	3.3	3:10
												FL340	-51.6	2.0	3:04	FL379	-60.6	.5	1:09
												FL390	-62.6	1.0	1:09				
												FL340	-52.6	1.0	1:47	FL360	-57.5	2.0	1:07
												FL370	-58.4	3.7	1:54	FL390	-65.5	1.0	1:28
												FL340	-51.0	1.0	3:25	FL370	-55.6	5.9	3:00
												FL329	-46.9	3.4	2:45	FL369	-54.9	3.1	2:34
												FL370	-54.1	5.0	2:00	FL390	-60.7	2.9	1:30
												FL330	-50.7	1.2	3:18	FL290	-43.3	.5	1:40
												FL330	-44.8	1.5	3:15	FL369	-49.7	5.9	2:04

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-ORD	4/17/78	76	6:17	-65	FL391	5:39	41.9N	97.9W	FL356	-53.2	5.5	FL331	-51.5	1.4	2:54	FL370	-54.5	5.0	1:11
HNL-ORD	4/19/76	79	6:55	-59	FL370	6:45	42.4N	92.2W	FL348	-49.0	4.6	FL390	-56.0	7.2	1:45	FL370	-52.7	4.2	3:11
HNL-ORD	4/20/76	79	6:43	-58	FL377	6:38	42.3N	92.1W	FL353	-50.6	4.5	FL330	-45.9	7.7	3:19	FL370	-54.1	2.3	2:33
HNL-ORD	5/ 9/78	83	7:04	-61	FL370	5:00	39.8N	112.6W	FL346	-50.9	7.6	FL331	-45.4	2.7	3:15	FL370	-39.0	1.8	2:15
HNL-ORD	5/10/78	78	6:39	-62	FL371	4:19	39.2N	116.8W	FL354	-52.9	6.7	FL341	-47.5	1.4	3:09	FL370	-59.7	1.5	3:04
HNL-ORD	5/14/76	82	6:46	-57	FL370	4:09	39.2N	119.3W	FL347	-49.9	4.2	FL330	-46.6	1.6	2:59	FL369	-54.0	1.5	2:56
HNL-ORD	5/15/77	78	6:44	-61	FL390	6:19	42.0N	95.3W	FL352	-49.7	5.4	FL330	-46.4	1.5	2:49	FL369	-51.7	3.6	2:29
HNL-ORD	5/16/77	77	6:39	-59	FL366	3:19	35.3N	127.6W	FL349	-49.3	5.6	FL330	-46.5	1.3	3:00	FL369	-52.9	5.4	3:20
HNL-ORD	5/17/78	80	6:42	-57	FL371	3:57	35.3N	118.2W	FL352	-49.8	4.1	FL340	-48.6	1.2	3:15	FL370	-52.4	3.0	2:59
HNL-ORD	5/29/78	78	6:49	-59	FL370	4:34	39.3N	114.3W	FL345	-48.6	5.6	FL330	-46.4	1.8	3:34	FL369	-52.9	5.5	2:39
HNL-ORD	5/30/79	84	6:44	-58	FL370	3:49	37.2N	121.8W	FL357	-51.9	4.6	FL340	-47.4	1.0	2:15	FL369	-55.6	2.0	1:34
HNL-ORD	5/31/79	82	6:44	-58	FL370	6:14	42.1N	96.7W	FL362	-51.7	4.0	FL370	-55.8	1.5	1:37	FL369	-53.1	2.9	2:54
HNL-ORD	6/ 3/79	85	6:58	-60	FL391	5:38	38.3N	104.5W	FL374	-52.0	3.9	FL360	-51.6	1.2	3:24	FL370	-53.1	1.0	2:19
HNL-ORD	6/ 6/79	78	6:24	-55	FL370	5:54	43.4N	96.0W	FL359	-49.4	3.8	FL350	-47.6	1.6	1:29	FL369	-51.8	1.9	3:24
HNL-ORD	6/ 7/78	80	6:34	-59	FL370	5:14	44.2N	105.8W	FL353	-51.8	6.6	FL330	-47.5	1.7	2:15	FL370	-56.9	1.1	3:54
HNL-ORD	6/ 9/75	81	6:38	-59	FL370	4:25	39.0N	116.8W	FL354	-51.2	5.7	FL330	-45.4	2.4	2:26	FL370	-55.4	1.8	3:47
HNL-ORD	6/14/75	81	6:42	-62	FL411	6:32	43.1N	92.1W	FL381	-52.3	3.7	FL370	-51.9	1.3	4:19	FL410	-54.2	4.6	1:49
HNL-ORD	6/14/79	76	6:14	-55	FL370	5:54	42.2N	94.8W	FL360	-51.7	3.7	FL360	-52.3	1.6	1:54	FL370	-53.6	1.9	2:59
HNL-ORD	6/15/78	85	6:38	-61	FL392	6:14	40.4N	92.6W	FL357	-52.3	5.0	FL340	-50.2	1.9	3:09	FL370	-53.7	1.7	2:24
HNL-ORD	6/19/79	234	6:43	-57	FL370	3:48	37.2N	122.2W	FL368	-52.2	4.8	FL360	-53.8	1.1	3:08	FL370	-52.1	4.8	3:09
HNL-ORD	6/21/77	79	6:55	-59	FL390	6:15	42.0N	98.8W	FL363	-52.3	5.5	FL330	-44.2	1.4	1:19	FL370	-54.4	1.7	3:50
HNL-ORD	6/26/77	81	7:00	-62	FL390	5:54	45.1N	101.6W	FL359	-50.6	7.1	FL330	-42.4	1.7	2:34	FL370	-53.7	1.5	2:24
HNL-ORD	6/28/78	78	6:24	-54	FL370	3:09	37.2N	127.6W	FL348	-47.2	5.1	FL389	-59.4	1.2	1:39	FL370	-50.5	1.8	3:04
HNL-ORD	6/30/77	81	6:39	-55	FL370	5:24	41.0N	105.6W	FL346	-46.1	6.4	FL330	-45.2	2.2	2:49	FL370	-52.5	2.0	2:49
HNL-ORD	7/ 1/77	76	6:29	-54	FL370	5:19	41.3N	104.4W	FL355	-46.3	4.4	FL330	-42.2	1.2	2:09	FL369	-48.8	3.5	3:54
HNL-ORD	7/ 2/78	74	6:09	-51	FL370	4:14	36.5N	112.1W	FL345	-43.8	4.3	FL330	-41.3	1.6	3:05	FL369	-48.1	1.7	2:29
HNL-ORD	7/10/77	77	6:42	-51	FL370	3:49	34.0N	121.3W	FL351	-46.8	4.0	FL340	-45.6	1.8	3:14	FL369	-49.6	1.3	2:53
HNL-ORD	7/10/79	80	6:34	-59	FL390	6:19	42.4N	92.8W	FL343	-44.7	8.5	FL320	-37.8	1.8	2:59	FL370	-52.8	1.6	2:30
HNL-ORD	7/15/77	76	6:29	-57	FL390	5:54	42.0N	97.5W	FL359	-48.7	4.4	FL330	-42.9	1.9	1:50	FL369	-50.9	1.0	3:39
HNL-ORD	7/15/78	76	6:14	-52	FL360	6:14	42.3N	90.2W	FL350	-45.8	3.6	FL330	-43.1	1.4	2:54	FL370	-48.9	1.8	2:54
HNL-ORD	7/19/77	83	6:54	-52	FL371	6:39	42.2N	93.4W	FL353	-47.1	3.3	FL340	-45.1	1.4	3:19	FL370	-50.0	1.6	3:09
HNL-ORD	7/29/78	79	6:29	-52	FL370	5:44	43.6N	98.6W	FL349	-45.8	4.9	FL330	-41.4	1.9	2:49	FL369	-50.5	1.1	3:09
HNL-ORD	8/ 5/77	73	6:20	-53	FL370	2:34	33.6N	132.8W	FL363	-49.6	3.6	FL369	-51.0	1.4	5:10	FL370	-51.3	1.9	3:54
HNL-ORD	8/ 5/78	82	6:44	-55	FL371	6:14	42.1N	95.0W	FL353	-48.1	4.4	FL330	-44.3	1.5	2:24	FL369	-47.7	1.9	1:59
HNL-ORD	8/14/77	73	6:24	-54	FL390	5:54	42.6N	96.3W	FL354	-46.4	4.1	FL340	-46.0	1.4	2:20	FL349	-50.0	1.4	1:10
HNL-ORD	9/ 8/77	67	6:29	-54	FL369	5:24	43.1N	102.5W	FL355	-49.3	4.7	FL329	-43.1	1.6	1:14	FL369	-50.0	1.4	1:10
HNL-ORD	9/16/78	88	6:34	-58	FL385	4:19	44.3N	118.4W	FL351	-48.0	5.8	FL368	-52.0	1.9	3:34	FL370	-54.3	1.7	1:49
HNL-ORD	9/25/75	78	6:43	-58	FL372	5:18	41.1N	105.8W	FL332	-45.4	9.5	FL330	-43.4	1.6	1:08	FL371	-54.7	2.4	3:09
HNL-ORD	9/25/78	75	6:24	-57	FL370	3:34	37.5N	120.6W	FL348	-48.5	7.0	FL290	-35.6	1.0	2:54	FL369	-55.0	1.6	3:04
HNL-ORD	9/29/78	77	6:24	-61	FL375	6:14	42.3N	92.8W	FL355	-51.5	6.0	FL330	-42.6	1.6	2:50	FL370	-56.8	1.9	2:54
HNL-ORD	10/ 1/75	80	6:44	-59	FL372	5:19	40.7N	106.3W	FL360	-51.6	5.5	FL340	-46.2	1.6	2:44	FL371	-54.3	3.7	4:49
HNL-ORD	10/ 2/78	82	6:51	-60	FL370	6:36	42.2N	93.3W	FL350	-50.2	6.9	FL330	-44.6	1.0	1:34	FL370	-56.8	1.6	3:21
HNL-ORD	10/20/78	82	6:49	-62	FL390	5:39	39.4N	102.5W	FL356	-50.5	7.2	FL340	-45.6	3.5	3:19	FL369	-54.9	2.4	1:04
HNL-ORD	10/28/78	77	6:21	-53	FL369	4:51	44.6N	109.1W	FL348	-47.8	3.2	FL389	-59.5	1.5	1:15	FL369	-49.1	2.1	2:39
HNL-ORD	11/28/77	76	6:19	-56	FL370	3:54	44.3N	119.6W	FL340	-45.8	7.0	FL329	-46.2	1.1	2:36	FL370	-51.7	1.8	2:19
HNL-ORD	12/ 4/76	79	6:45	-63	FL371	5:25	38.9N	104.7W	FL348	-52.9	6.9	FL330	-45.0	2.4	2:54	FL370	-59.0	2.0	2:49

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-ORD	12/ 5/78	205	6:21	-49	FL369	4:32	39.2N	114.0W	FL361	-44.1	2.4	FL329	-45.3	2.3	3:14	FL369	-43.9	1.7	2:41
HNL-ORD	12/21/77	79	6:23	-58	FL330	5:53	40.7N	94.7W	FL311	-44.7	8.6	FL300	-38.6	2.2	2:08	FL270	-36.2	2.3	1:10
HNL-ORD	12/23/78	120	6:09	-62	FL370	5:45	40.8N	95.0W	FL354	-54.2	4.9	FL330	-56.1	1.6	1:10				
HNL-ORD	12/24/78	78	6:24	-63	FL370	4:34	40.0N	110.6W	FL356	-53.7	7.5	FL340	-48.5	3.3	2:45	FL370	-59.2	3.3	3:15
HNL-ORD	12/27/75	82	7:04	-66	FL390	3:55	36.3N	124.6W	FL372	-58.0	5.6	FL330	-42.7	3.2	1:20	FL370	-56.5	4.1	2:10
HNL-ORD	12/29/78	207	6:17	-65	FL366	6:17	41.3N	90.3W	FL358	-52.3	7.6	FL370	-58.2	2.0	3:30	FL370	-55.4	4.3	2:48
HNL-ORD	1/ 3/79	95	8:04	-48	FL370	7:34	33.7N	142.1E	FL340	-39.0	5.7	FL300	-38.9	3.6	2:35	FL330	-35.3	.5	2:00
HNL-OSA	2/11/79	94	8:08	-62	FL390	3:53	34.3N	172.8E	FL374	-51.2	6.6	FL309	-31.3	.4	1:09	FL369	-46.4	.9	1:44
HNL-OSA	2/20/79	430	7:59	-65	FL381	2:53	36.3N	176.6W	FL389	-50.5	6.6	FL350	-44.5	3.2	2:20	FL390	-55.0	4.1	4:39
HNL-OSA	3/31/79	95	7:49	-57	FL371	6:30	32.0N	147.6E	FL346	-49.6	5.6	FL370	-56.5	2.5	1:31	FL390	-44.6	4.8	2:37
HNL-OSA	5/ 7/79	91	7:29	-61	FL390	3:54	31.3N	167.6E	FL363	-52.1	8.0	FL409	-50.1	2.3	1:52				
HNL-OSA	10/28/78	86	7:07	-56	FL349	2:59	30.0N	175.4E	FL333	-47.3	4.9	FL331	-45.0	.5	1:39	FL351	-51.3	.8	3:34
HNL-OSA	11/ 6/78	77	7:25	-52	FL390	3:45	25.5N	167.9E	FL369	-47.8	3.9	FL370	-55.0	.6	1:35				
HNL-PDX	5/17/78	47	3:57	-59	FL370	1:46	34.4N	143.6W	FL355	-53.8	6.2	FL310	-37.9	.4	1:09	FL350	-49.8	2.0	2:24
HNL-PDX	6/ 1/78	48	4:04	-58	FL370	3:15	40.9N	131.9W	FL355	-51.9	5.4	FL390	-58.8	1.5	3:34	FL350	-50.8	2.3	4:02
HNL-PDX	6/20/78	50	4:09	-57	FL370	3:04	38.8N	133.6W	FL341	-50.2	3.6	FL310	-43.1	2.5	2:44	FL390	-50.7	1.2	3:30
HNL-PDX	7/ 4/78	48	3:54	-58	FL370	3:24	42.1N	128.4W	FL354	-50.5	5.6	FL350	-45.5	.8	3:10	FL370	-55.4	1.5	2:34
HNL-PDX	10/25/78	49	4:05	-57	FL371	1:45	32.5N	144.7W	FL358	-49.3	5.4	FL330	-46.0	.9	1:04	FL370	-54.5	1.7	2:25
HNL-PDX	10/27/78	46	3:56	-56	FL370	0:44	27.7N	153.1W	FL364	-51.1	4.0	FL370	-52.2	2.4	2:49				
HNL-PPG	1/ 9/77	48	4:04	-47	FL351	3:25	8.6S	168.4W	FL336	-40.1	5.1	FL370	-51.9	2.5	3:11				
HNL-PPG	3/29/77	53	4:34	-55	FL390	0:54	13.5N	160.5W	FL386	-53.8	3.5	FL350	-43.5	1.3	2:39				
HNL-PPG	5/ 3/77	51	4:19	-66	FL430	3:19	5.0S	167.2W	FL403	-56.4	5.5	FL389	-54.5	.9	4:19				
HNL-PPG	5/10/77	55	4:41	-61	FL410	4:31	12.0S	169.8W	FL397	-56.8	4.3	FL389	-55.1	.7	2:39	FL429	-65.2	.4	1:24
HNL-PPG	5/26/79	52	4:08	-44	FL347	0:09	17.8N	159.0W	FL347	-42.4	3.0	FL395	-56.0	.6	2:02	FL409	-59.8	.6	2:00
HNL-PPG	5/27/78	38	3:04	-44	FL351	0:00	11.3N	161.3W	FL351	-43.8	.4	FL350	-43.1	.6	3:54				
HNL-PPG	6/10/77	46	4:09	-47	FL351	0:15	16.7N	159.2W	FL348	-44.6	2.5	FL350	-43.8	.4	3:04				
HNL-PPG	6/12/77	51	4:11	-44	FL350	1:12	9.5N	162.0W	FL344	-42.0	2.3	FL350	-45.1	.7	3:49				
HNL-PPG	6/29/77	49	4:04	-50	FL370	3:25	8.0S	168.2W	FL347	-43.5	5.1	FL350	-43.1	.7	2:57				
HNL-PPG	7/ 1/77	47	3:57	-46	FL351	2:42	2.9S	166.4W	FL338	-41.7	4.9	FL350	-44.4	.7	2:20				
HNL-PPG	7/ 3/77	48	4:00	-46	FL351	1:46	4.7N	163.9W	FL341	-42.5	3.9	FL350	-44.9	.4	2:42				
HNL-PPG	8/22/76	53	3:59	-40	FL350	1:03	10.2N	161.6W	FL340	-36.6	3.8	FL331	-40.0	1.0	1:12	FL351	-45.2	.8	2:27
HNL-PPG	8/24/76	50	4:00	-50	FL390	3:35	9.7S	169.0W	FL354	-40.4	4.3	FL350	-38.6	.6	2:55				
HNL-PPG	8/26/76	51	4:00	-40	FL350	1:19	7.6N	162.7W	FL338	-36.8	4.3	FL349	-39.1	.4	3:06				
HNL-PPG	8/30/76	55	4:05	-38	FL350	1:00	11.0N	161.4W	FL346	-35.5	3.5	FL350	-39.4	.5	2:46				
HNL-PPG	11/ 4/78	49	4:15	-47	FL350	0:15	16.8N	159.3W	FL348	-43.8	2.4	FL350	-36.5	.8	3:48				
HNL-PPG	11/ 7/76	65	4:24	-44	FL350	3:07	3.7S	166.8W	FL332	-38.5	5.7	FL349	-44.3	.7	3:55				
HNL-PPG	12/14/76	51	4:19	-65	FL430	1:49	6.0N	163.3W	FL410	-58.6	7.9	FL310	-32.5	.9	1:56	FL350	-43.3	.5	2:13
HNL-PPG	12/17/77	45	4:00	-40	FL350	2:24	.9S	165.7W	FL333	-35.1	5.1	FL390	-52.9	.6	1:20	FL429	-63.9	.7	2:29
HNL-PPG	12/21/76	55	4:30	-61	FL410	1:19	10.1N	161.7W	FL407	-59.0	3.4	FL309	-29.2	.9	1:15	FL349	-39.1	.6	2:24
HNL-PPG	12/28/76	55	4:34	-56	FL390	1:29	9.7N	161.9W	FL388	-54.3	1.6	FL410	-59.7	.6	4:04				
HNL-SEA	2/13/79	39	3:49	-52	FL371	0:54	28.6N	150.3W	FL368	-45.6	3.6	FL390	-54.6	.6	4:19				
HNL-SEA	3/20/77	53	4:24	-64	FL371	3:15	42.5N	136.6W	FL367	-60.9	5.5	FL371	-45.8	3.3	3:29				
HNL-SEA	3/30/76	45	4:04	-64	FL371	1:54	33.7N	142.0W	FL370	-57.4	5.7	FL370	-62.2	2.4	4:00				
HNL-SEA	3/31/76	50	4:09	-61	FL350	3:39	44.9N	130.2W	FL337	-54.4	3.5	FL370	-57.6	5.6	3:59				
HNL-SEA	4/ 1/76	50	4:14	-58	FL334	3:34	42.2N	129.2W	FL312	-49.0	6.5	FL331	-52.6	1.3	2:44	FL350	-58.8	1.7	1:15
HNL-SEA	4/ 2/76	51	4:19	-50	FL290	3:59	45.1N	127.7W	FL290	-43.1	2.7	FL292	-42.5	1.4	1:54	FL332	-55.5	1.0	2:04
HNL-SEA	4/ 3/76	50	4:10	-64	FL370	3:40	45.0N	129.9W	FL367	-60.7	3.5	FL290	-43.1	2.7	4:19				
HNL-SEA	4/16/78	50	4:12	-64	FL370	2:25	37.8N	140.3W	FL348	-53.8	5.4	FL370	-61.4	2.0	3:50				
												FL330	-50.4	1.8	1:45	FL369	-57.0	5.5	2:05

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-SEA	5/ 8/76	52	4:31	-64	FL392	3:37	42.2N	133.3W	FL378	-56.0	5.5	FL371	-53.9	2.3	2:00	FL392	-59.8	2.1	2:04
HNL-SEA	5/10/77	50	4:18	-63	FL371	2:58	39.4N	134.8W	FL367	-55.3	6.5	FL370	-56.3	4.9	4:05				
HNL-SEA	6/ 2/77	49	3:59	-59	FL371	3:19	43.3N	131.9W	FL368	-53.7	3.5	FL370	-54.2	2.3	3:44				
HNL-SEA	6/ 5/77	43	3:50	-57	FL370	2:35	37.8N	136.9W	FL368	-53.9	4.0	FL370	-54.7	1.5	3:40				
HNL-SEA	6/20/77	47	4:09	-57	FL370	3:39	44.4N	129.6W	FL361	-52.3	4.7	FL370	-54.8	1.2	3:09				
HNL-SEA	7/ 6/77	53	4:20	-59	FL370	3:00	40.6N	137.4W	FL368	-56.2	2.7	FL370	-56.6	1.2	4:09				
HNL-SEA	7/17/77	52	4:22	-55	FL371	1:33	33.2N	148.5W	FL355	-49.2	4.2	FL331	-45.5	.9	1:20	FL370	-51.9	.9	2:48
HNL-SEA	11/14/76	46	4:00	-53	FL370	3:55	46.4N	124.8W	FL364	-47.5	4.3	FL369	-48.5	1.6	3:40				
HNL-SEA	12/ 5/76	53	4:25	-61	FL371	2:45	40.2N	141.4W	FL369	-59.0	3.1	FL370	-59.5	1.2	4:15				
HNL-SEA	12/12/77	50	3:53	-61	FL390	2:56	41.8N	134.0W	FL367	-52.9	5.8	FL370	-52.5	1.9	1:57	FL390	-59.8	.9	1:04
HNL-SEA	12/19/76	55	4:26	-65	FL371	4:22	45.4N	125.0W	FL363	-55.7	6.7	FL370	-58.2	4.5	3:26				
HNL-SFO	1/ 2/79	173	3:15	-53	FL370	3:12	36.2N	125.3W	FL369	-46.8	2.7	FL369	-47.0	2.0	3:00				
HNL-SFO	1/ 4/77	50	3:53	-63	FL370	2:24	31.7N	137.7W	FL366	-55.0	6.6	FL370	-56.2	4.9	3:33				
HNL-SFO	1/ 5/77	45	3:45	-51	FL330	1:59	30.5N	140.7W	FL328	-47.4	4.1	FL329	-48.2	2.7	3:30				
HNL-SFO	1/ 5/78	45	3:39	-64	FL370	2:49	33.6N	132.7W	FL366	-58.3	7.0	FL370	-59.8	5.1	3:19				
HNL-SFO	1/ 5/78	43	3:33	-54	FL330	3:19	35.7N	126.3W	FL327	-45.7	7.1	FL330	-46.2	6.5	3:21				
HNL-SFO	1/ 7/78	40	3:21	-51	FL330	2:54	35.1N	128.3W	FL328	-42.0	5.5	FL330	-42.4	4.5	3:15				
HNL-SFO	1/ 7/79	14	1:05	-59	FL370	0:35	34.5N	128.9W	FL368	-57.4	1.2								
HNL-SFO	1/10/78	41	3:14	-51	FL369	3:09	36.5N	124.5W	FL362	-46.6	3.9	FL369	-47.3	1.8	3:00				
HNL-SFO	1/11/78	45	3:45	-59	FL380	3:25	36.2N	128.0W	FL375	-48.9	4.8	FL379	-49.7	4.1	3:25				
HNL-SFO	1/11/79	39	3:10	-64	FL391	2:40	37.3N	130.2W	FL366	-54.5	6.2	FL370	-55.2	2.4	2:15				
HNL-SFO	1/13/77	42	3:33	-62	FL370	3:24	35.8N	126.0W	FL364	-53.1	7.1	FL369	-54.4	5.5	3:14				
HNL-SFO	1/13/78	47	3:47	-51	FL410	2:59	34.0N	131.3W	FL376	-47.0	4.5	FL370	-46.7	.5	1:49				
HNL-SFO	1/13/78	43	3:34	-49	FL370	3:24	36.2N	125.6W	FL340	-41.6	5.1	FL330	-39.4	2.2	2:09	FL369	-47.5	1.1	1:04
HNL-SFO	1/15/78	36	3:00	-39	FL330	0:15	23.9N	153.2W	FL328	-37.7	1.6	FL330	-38.0	1.0	2:50				
HNL-SFO	1/18/78	43	3:35	-61	FL370	1:50	30.1N	141.2W	FL366	-53.1	6.8	FL370	-54.1	5.7	3:20				
HNL-SFO	1/18/79	207	3:50	-61	FL390	3:06	34.1N	131.0W	FL381	-55.9	4.0	FL370	-53.8	3.9	1:45	FL392	-58.0	1.5	1:45
HNL-SFO	1/19/79	44	3:34	-58	FL370	1:39	30.2N	141.2W	FL367	-53.3	4.8	FL370	-54.0	3.8	3:20				
HNL-SFO	1/20/78	40	3:19	-58	FL348	3:19	36.5N	124.4W	FL368	-52.2	2.5	FL370	-52.4	1.8	3:04				
HNL-SFO	1/20/79	46	3:37	-58	FL370	3:31	36.3N	124.5W	FL365	-51.5	4.6	FL369	-52.5	3.8	3:19				
HNL-SFO	1/22/78	46	3:45	-55	FL330	3:45	36.5N	124.2W	FL329	-49.5	3.9	FL330	-50.2	2.5	3:35				
HNL-SFO	1/24/78	43	3:57	-64	FL382	2:37	33.3N	136.4W	FL364	-54.4	9.4	FL340	-43.8	3.3	1:04	FL381	-62.0	1.4	1:45
HNL-SFO	1/24/79	180	3:24	-47	FL370	2:37	33.7N	132.4W	FL370	-44.6	1.7	FL370	-44.6	1.6	3:09				
HNL-SFO	1/25/77	44	3:40	-65	FL390	1:25	28.9N	144.1W	FL380	-59.6	4.1	FL390	-61.1	2.9	2:09				
HNL-SFO	1/25/79	44	3:34	-50	FL370	2:49	34.3N	131.0W	FL365	-45.6	3.2	FL369	-46.3	1.9	3:10				
HNL-SFO	1/26/76	46	3:44	-64	FL371	3:34	37.1N	126.2W	FL366	-51.8	5.8	FL370	-52.8	4.0	3:24				
HNL-SFO	1/26/78	43	3:40	-61	FL390	2:50	34.0N	131.6W	FL380	-53.1	7.0	FL390	-56.5	3.3	2:40				
HNL-SFO	1/26/78	42	3:37	-61	FL370	2:05	31.1N	139.1W	FL368	-52.6	6.0	FL369	-53.2	5.5	3:30				
HNL-SFO	1/27/77	18	2:57	-62	FL380	1:48	33.0N	137.1W	FL380	-55.6	5.4	FL380	-55.6	5.4	2:57				
HNL-SFO	1/28/76	43	3:44	-60	FL371	3:44	36.6N	124.4W	FL367	-50.9	6.3	FL370	-51.8	4.6	3:29				
HNL-SFO	1/28/78	41	3:40	-62	FL371	1:55	30.9N	139.5W	FL366	-53.2	7.1	FL370	-54.5	5.4	3:20				
HNL-SFO	1/29/79	46	3:44	-63	FL370	2:10	31.3N	138.7W	FL367	-58.8	4.2	FL370	-59.6	2.8	3:23				
HNL-SFO	1/30/78	43	3:30	-59	FL370	3:20	35.9N	126.1W	FL366	-50.8	7.3	FL371	-52.8	4.3	3:05				
HNL-SFO	1/31/78	41	3:24	-63	FL371	2:54	34.9N	129.0W	FL369	-51.0	7.4	FL370	-51.7	6.8	3:09				
HNL-SFO	2/ 2/76	45	3:49	-56	FL370	1:59	30.8N	140.4W	FL367	-51.3	4.4	FL370	-51.9	3.7	3:29				
HNL-SFO	2/ 2/78	45	3:32	-63	FL371	3:22	35.9N	125.7W	FL366	-51.6	10.3	FL370	-53.0	8.6	3:12				
HNL-SFO	2/ 3/78	39	3:24	-63	FL370	3:09	35.4N	126.9W	FL366	-50.3	10.1	FL369	-52.0	9.0	3:04				
HNL-SFO	2/ 4/78	40	3:12	-47	FL330	3:07	36.2N	125.0W	FL328	-34.6	3.5	FL329	-34.7	3.3	3:01				
HNL-SFO	2/11/77	41	3:34	-60	FL370	3:19	35.4N	127.3W	FL368	-55.7	5.5	FL370	-56.6	3.6	3:24				
HNL-SFO	2/11/78	40	3:20	-56	FL330	2:30	33.7N	132.3W	FL327	-46.6	7.2	FL330	-47.5	6.4	3:00				
HNL-SFO	2/14/77	44	3:34	-68	FL400	2:54	35.2N	130.9W	FL383	-55.7	7.6	FL380	-52.4	1.6	2:09				
HNL-SFO	2/14/78	44	3:31	-65	FL371	2:45	33.8N	132.1W	FL367	-56.1	9.0	FL370	-57.3	7.5	3:15				
HNL-SFO	2/16/78	45	3:49	-67	FL371	3:39	36.2N	125.3W	FL365	-56.0	8.6	FL370	-57.6	7.5	3:24				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-SFO	2/17/79	43	3:30	-58	FL330	2:40	33.9N	132.3W	FL327	-48.9	7.1	FL329	-50.1	5.9	3:10				
HNL-SFO	2/18/78	45	3:42	-64	FL371	1:16	28.1N	145.6W	FL366	-59.6	5.4	FL370	-60.9	3.1	3:22				
HNL-SFO	2/18/79	40	3:15	-63	FL371	2:49	35.0N	128.4W	FL366	-55.2	5.8	FL370	-56.5	3.6	2:54				
HNL-SFO	2/19/77	45	3:32	-52	FL390	1:09	27.3N	147.1W	FL380	-49.0	4.4	FL390	-51.2	.7	2:20				
HNL-SFO	2/19/79	40	3:14	-61	FL370	3:00	35.4N	126.5W	FL366	-53.6	5.2	FL370	-54.7	2.9	2:59				
HNL-SFO	2/20/78	44	3:39	-67	FL371	2:31	33.0N	134.2W	FL369	-59.1	6.5	FL372	-60.4	4.9	3:19				
HNL-SFO	2/21/78	43	3:34	-62	FL371	2:55	34.7N	129.6W	FL367	-52.2	8.5	FL370	-53.5	6.8	3:18				
HNL-SFO	2/23/79	42	3:21	-64	FL385	2:56	35.1N	128.3W	FL370	-56.6	5.4	FL361	-54.1	2.7	1:11	FL383	-59.8	3.3	1:45
HNL-SFO	2/24/78	45	3:40	-64	FL370	3:20	35.2N	127.7W	FL367	-51.6	8.5	FL370	-52.9	7.0	3:25				
HNL-SFO	2/26/76	41	3:36	-61	FL370	1:39	29.8N	142.7W	FL366	-59.1	4.9	FL370	-60.2	.8	3:22				
HNL-SFO	2/26/78	20	1:35	-52	FL330	0:10	31.7N	137.8W	FL330	-51.3	.8	FL330	-51.3	.8	1:35				
HNL-SFO	2/27/79	45	3:45	-60	FL360	2:47	33.7N	133.0W	FL357	-53.4	5.0	FL360	-53.9	4.7	3:26				
HNL-SFO	2/28/77	46	3:44	-63	FL370	1:49	29.8N	142.0W	FL366	-59.6	4.6	FL370	-60.5	2.3	3:30				
HNL-SFO	2/28/78	39	3:30	-63	FL370	3:26	36.4N	124.3W	FL363	-47.3	7.7	FL370	-48.8	6.6	3:06				
HNL-SFO	2/28/79	45	3:45	-64	FL360	3:34	36.1N	125.4W	FL357	-55.3	5.1	FL360	-55.8	4.9	3:30				
HNL-SFO	2/29/76	43	3:32	-61	FL373	2:22	32.5N	136.2W	FL366	-49.7	8.0	FL370	-49.9	5.5	2:09				
HNL-SFO	3/ 3/79	48	3:46	-60	FL380	3:20	35.1N	127.9W	FL365	-50.0	6.7	FL360	-46.4	1.8	1:52	FL380	-56.6	2.4	1:29
HNL-SFO	3/ 9/78	46	3:45	-63	FL370	2:09	31.3N	138.8W	FL365	-58.6	6.5	FL370	-60.2	3.5	3:24				
HNL-SFO	3/10/78	67	3:48	-68	FL382	2:52	34.3N	133.5W	FL378	-59.0	6.0	FL381	-59.8	4.5	3:27				
HNL-SFO	3/12/78	49	3:56	-61	FL370	3:46	37.8N	125.7W	FL367	-56.9	3.4	FL370	-57.6	1.1	3:40				
HNL-SFO	3/14/79	43	3:45	-63	FL360	3:40	36.5N	124.4W	FL357	-58.3	4.1	FL359	-59.0	2.4	3:35				
HNL-SFO	3/19/77	42	3:54	-62	FL370	1:50	30.0N	141.7W	FL366	-55.0	6.6	FL369	-55.9	5.1	3:34				
HNL-SFO	3/21/77	47	3:54	-62	FL370	3:24	35.1N	128.4W	FL367	-57.3	4.7	FL370	-58.2	3.0	3:34				
HNL-SFO	3/21/77	46	3:54	-63	FL371	3:50	36.3N	124.8W	FL366	-57.5	4.8	FL370	-58.6	2.8	3:35				
HNL-SFO	3/22/77	21	1:40	-62	FL370	0:10	31.4N	138.4W	FL370	-60.6	1.1	FL369	-60.6	1.1	1:40				
HNL-SFO	3/30/79	48	3:45	-63	FL381	2:49	33.6N	132.7W	FL371	-55.8	7.6	FL380	-60.5	2.9	2:39				
HNL-SFO	4/ 3/78	48	3:47	-63	FL370	2:55	33.8N	132.2W	FL366	-58.0	5.1	FL370	-59.3	2.6	3:24				
HNL-SFO	4/ 4/75	45	2:59	-63	FL371	2:21	34.2N	131.5W	FL369	-58.8	4.2	FL370	-59.4	2.8	2:52				
HNL-SFO	4/ 4/77	34	3:39	-61	FL370	3:24	35.6N	126.7W	FL365	-57.2	4.7	FL370	-58.4	1.3	3:20				
HNL-SFO	4/ 5/77	42	3:34	-60	FL370	3:00	34.7N	129.6W	FL368	-57.9	3.0	FL369	-58.5	.7	3:24				
HNL-SFO	4/ 8/77	46	3:44	-62	FL370	2:24	32.0N	137.0W	FL367	-56.0	4.5	FL369	-56.9	2.9	3:24				
HNL-SFO	4/ 9/79	46	3:50	-61	FL371	3:45	37.6N	125.0W	FL340	-48.6	6.4	FL331	-45.5	1.6	2:24				
HNL-SFO	4/10/77	45	3:45	-52	FL331	3:20	35.2N	127.8W	FL329	-49.5	2.9	FL331	-50.1	1.2	3:30				
HNL-SFO	4/10/77	30	3:41	-61	FL371	2:45	33.3N	133.6W	FL365	-57.4	5.0	FL369	-58.7	1.8	3:27				
HNL-SFO	4/11/77	42	3:54	-62	FL370	3:24	35.1N	128.3W	FL363	-57.6	5.6	FL370	-59.6	1.8	3:25				
HNL-SFO	4/12/75	44	3:33	-64	FL371	3:29	36.3N	124.8W	FL368	-58.7	4.1	FL370	-59.4	2.1	3:19				
HNL-SFO	4/13/77	51	4:07	-59	FL370	3:46	35.4N	127.4W	FL368	-56.1	4.2	FL370	-56.9	1.5	3:56				
HNL-SFO	4/14/77	47	3:54	-57	FL370	1:09	27.3N	147.1W	FL367	-55.3	3.5	FL369	-56.2	1.3	3:40				
HNL-SFO	4/14/78	45	3:38	-61	FL370	1:59	30.7N	140.1W	FL365	-55.6	5.4	FL370	-56.8	3.2	3:19				
HNL-SFO	4/15/77	45	3:46	-58	FL370	1:26	30.7N	147.1W	FL366	-55.5	4.5	FL370	-56.7	1.6	3:25				
HNL-SFO	4/15/77	43	3:45	-57	FL370	1:00	26.6N	148.5W	FL366	-54.9	5.1	FL369	-56.1	2.0	3:24				
HNL-SFO	4/17/77	40	3:39	-60	FL370	1:59	31.1N	139.3W	FL365	-56.3	5.4	FL369	-58.0	2.0	3:14				
HNL-SFO	4/17/77	45	3:45	-64	FL381	2:39	33.9N	134.8W	FL377	-59.5	6.6	FL381	-61.0	3.7	3:24				
HNL-SFO	4/18/77	44	3:39	-61	FL371	3:05	34.7N	129.5W	FL366	-57.0	5.0	FL370	-58.4	2.3	3:15				
HNL-SFO	4/19/78	40	3:35	-65	FL381	1:50	30.8N	142.1W	FL374	-59.7	6.6	FL380	-61.7	2.0	3:04				
HNL-SFO	4/20/79	42	3:24	-58	FL361	1:50	30.7N	139.6W	FL354	-54.3	4.5	FL360	-56.2	1.3	2:39				
HNL-SFO	4/22/76	49	4:01	-59	FL370	3:51	37.6N	126.3W	FL366	-54.3	4.5	FL370	-55.4	1.8	3:41				
HNL-SFO	4/22/78	39	3:30	-61	FL370	3:20	35.7N	126.3W	FL365	-57.1	5.4	FL370	-58.4	1.6	3:15				
HNL-SFO	4/23/76	33	2:50	-58	FL370	2:20	32.3N	136.9W	FL367	-55.1	3.6	FL369	-55.9	1.7	2:39				
HNL-SFO	4/25/78	42	3:30	-57	FL371	0:26	24.5N	152.1W	FL369	-54.9	2.4	FL371	-55.5	1.0	3:14				
HNL-SFO	4/26/77	39	3:29	-57	FL369	2:19	32.6N	135.4W	FL362	-52.4	6.1	FL369	-54.4	2.6	2:59				
HNL-SFO	4/27/76	43	3:34	-59	FL370	3:20	35.6N	126.9W	FL367	-55.1	4.3	FL370	-56.0	1.4	3:24				
HNL-SFO	4/27/77	42	3:27	-59	FL370	1:24	28.6N	144.6W	FL366	-56.5	5.2	FL369	-57.7	1.1	3:13				







APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
HNL-SFO	11/ 6/78	46	3:45	-56	FL370	3:10	37.2N	130.0W	FL366	-52.6	4.9	FL370	-54.0	1.0	3:24				
HNL-SFO	11/ 7/78	49	4:04	-56	FL370	3:45	35.5N	126.8W	FL365	-53.0	3.6	FL370	-53.9	1.0	3:40				
HNL-SFO	11/11/76	18	1:29	-60	FL374	1:29	37.0N	123.9W	FL380	-52.9	2.7	FL380	-52.5	2.2	1:24				
HNL-SFO	11/11/77	41	3:32	-60	FL391	2:12	32.1N	136.9W	FL377	-55.0	4.3	FL370	-54.1	1.1	1:29	FL390	-57.6	1.3	1:34
HNL-SFO	11/14/77	44	3:50	-55	FL370	2:00	30.2N	141.2W	FL368	-52.6	2.4	FL369	-53.0	1.4	3:40				
HNL-SFO	11/17/76	50	3:39	-56	FL379	1:33	29.8N	144.3W	FL374	-51.7	3.9	FL378	-52.7	2.2	3:14				
HNL-SFO	11/18/76	44	3:39	-46	FL331	1:30	28.7N	144.2W	FL329	-43.4	3.2	FL329	-43.7	2.6	3:34				
HNL-SFO	11/18/76	47	3:41	-56	FL370	1:38	29.1N	143.6W	FL367	-51.8	4.9	FL369	-52.6	3.1	3:31				
HNL-SFO	11/19/77	45	3:50	-58	FL370	2:45	33.2N	133.9W	FL366	-54.8	5.0	FL370	-56.0	1.1	3:30				
HNL-SFO	11/24/76	42	3:39	-61	FL371	1:34	29.5N	142.7W	FL360	-55.9	5.3	FL370	-58.6	1.4	2:39				
HNL-SFO	11/26/76	44	3:42	-50	FL330	2:57	34.2N	131.1W	FL327	-46.1	3.8	FL329	-47.0	1.7	3:34				
HNL-SFO	11/30/76	44	3:37	-61	FL377	1:13	27.9N	145.9W	FL367	-57.1	4.1	FL370	-58.0	1.1	1:45				
HNL-SFO	12/ 1/77	43	3:33	-51	FL370	3:33	36.4N	124.3W	FL368	-48.0	3.1	FL370	-48.6	1.1	3:23				
HNL-SFO	12/ 2/76	45	3:50	-51	FL330	3:39	36.0N	125.6W	FL328	-46.6	3.5	FL329	-47.2	1.8	3:39				
HNL-SFO	12/ 7/76	46	3:54	-60	FL371	3:29	35.2N	128.1W	FL367	-57.0	5.0	FL370	-58.1	1.7	3:39				
HNL-SFO	12/ 7/78	45	3:33	-58	FL370	1:03	27.5N	146.7W	FL365	-55.8	4.5	FL369	-57.0	.7	3:19				
HNL-SFO	12/ 9/76	49	3:53	-60	FL390	2:43	32.5N	134.0W	FL380	-54.3	5.1	FL390	-56.5	2.7	2:39				
HNL-SFO	12/ 9/76	44	3:44	-48	FL311	3:09	34.6N	129.6W	FL301	-42.3	4.7	FL290	-37.3	1.2	1:39	FL310	-46.6	1.1	1:54
HNL-SFO	12/ 9/77	42	3:39	-57	FL370	3:09	36.8N	129.3W	FL365	-50.5	4.8	FL369	-51.3	2.9	3:19				
HNL-SFO	12/10/78	35	3:40	-62	FL370	3:30	37.7N	125.7W	FL366	-56.6	5.1	FL370	-57.8	2.9	3:19				
HNL-SFO	12/13/76	44	3:50	-53	FL330	3:20	35.2N	128.0W	FL303	-39.1	8.2	FL289	-33.6	2.7	2:24	FL329	-49.6	2.2	1:09
HNL-SFO	12/15/76	44	3:34	-62	FL380	2:54	35.5N	130.2W	FL375	-56.6	4.8	FL380	-57.8	2.4	3:14				
HNL-SFO	12/16/76	41	3:27	-59	FL370	3:07	35.3N	126.8W	FL366	-48.2	6.2	FL370	-48.8	5.5	3:06				
HNL-SFO	12/16/76	37	3:19	-48	FL330	2:59	35.5N	127.2W	FL330	-42.8	3.9	FL330	-42.9	3.9	3:14				
HNL-SFO	12/16/78	44	3:45	-64	FL370	2:30	32.2N	136.3W	FL368	-59.5	5.4	FL369	-60.4	3.3	3:34				
HNL-SFO	12/17/78	45	3:54	-60	FL370	1:34	28.3N	145.2W	FL363	-53.9	6.7	FL369	-55.6	3.8	3:30				
HNL-SFO	12/18/77	40	3:19	-60	FL375	1:54	31.1N	139.1W	FL367	-54.7	5.1	FL371	-55.9	2.8	3:05				
HNL-SFO	12/21/76	43	3:38	-56	FL340	3:28	36.7N	126.0W	FL338	-51.0	4.4	FL340	-51.9	2.0	3:28				
HNL-SFO	12/23/76	45	3:44	-54	FL330	3:19	35.0N	128.6W	FL329	-46.1	5.5	FL330	-46.7	4.6	3:34				
HNL-SFO	12/25/76	46	3:49	-53	FL330	1:49	29.6N	142.6W	FL329	-48.8	3.7	FL330	-49.2	2.1	3:45				
HNL-SFO	12/25/78	28	2:15	-56	FL370	2:00	35.5N	126.5W	FL370	-50.8	2.9	FL370	-50.6	2.7	2:09				
HNL-SFO	12/26/78	174	3:18	-56	FL380	0:44	26.6N	150.4W	FL379	-52.4	2.3	FL380	-52.5	1.9	3:07				
HNL-SFO	12/28/75	44	3:45	-61	FL371	1:13	27.4N	147.4W	FL368	-57.9	3.8	FL370	-58.7	1.2	3:30				
HNL-SFO	12/29/78	40	3:22	-55	FL340	2:52	35.6N	129.4W	FL339	-49.7	4.2	FL340	-50.1	3.4	3:15				
HNL-SFO	12/30/78	40	3:15	-61	FL372	2:44	34.9N	129.0W	FL367	-53.7	6.1	FL370	-54.8	4.8	3:00				
HNL-SFO	12/31/78	40	3:22	-62	FL391	2:52	34.7N	129.6W	FL373	-51.3	8.6	FL370	-47.0	2.9	1:43	FL390	-61.1	.8	1:15
HNL-STL	3/26/78	79	6:35	-62	FL369	5:35	39.2N	103.2W	FL350	-53.2	6.6	FL330	-48.0	2.7	3:04	FL369	-59.1	2.0	3:10
HNL-SYD	1/ 6/78	97	8:11	-51	FL370	8:01	32.7S	154.2E	FL342	-38.2	5.4	FL310	-31.5	.7	2:19	FL350	-40.0	1.3	3:34
HNL-SYD	1/11/78	103	8:47	-48	FL351	8:05	31.7S	156.4E	FL334	-39.6	5.7	FL310	-33.4	1.4	3:28	FL350	-44.0	1.9	4:59
HNL-SYD	1/14/78	100	8:30	-48	FL350	6:10	21.2S	167.0E	FL325	-38.3	8.1	FL280	-25.9	.8	1:11	FL310	-32.9	.6	3:09
HNL-SYD	1/16/78	97	8:44	-49	FL351	8:29	33.0S	154.8E	FL325	-37.9	8.5	FL350	-46.5	1.4	3:54				
HNL-SYD	1/21/78	97	8:38	-49	FL351	6:50	24.1S	164.3E	FL330	-37.9	8.0	FL280	-26.3	.6	1:25	FL310	-31.4	.7	2:54
HNL-SYD	1/23/78	104	8:39	-53	FL370	7:19	27.1S	161.4E	FL329	-37.6	8.6	FL350	-46.3	1.4	4:00				
HNL-SYD	2/ 1/78	100	8:37	-43	FL351	7:52	30.1S	158.2E	FL327	-34.4	6.6	FL310	-30.7	.5	3:09	FL350	-44.9	2.3	4:25
HNL-SYD	2/ 3/78	96	8:09	-45	FL350	7:49	32.1S	155.8E	FL325	-33.8	7.0	FL310	-29.4	.7	3:14	FL329	-35.6	.6	1:30
HNL-SYD	2/12/78	108	8:56	-46	FL350	8:16	31.9S	156.2E	FL332	-37.2	5.8	FL350	-43.0	1.8	1:40	FL351	-40.7	1.1	4:13
HNL-SYD	2/15/78	100	8:34	-49	FL351	8:04	31.6S	156.6E	FL324	-34.6	6.5	FL310	-29.3	.9	3:15	FL350	-41.0	1.7	3:39
HNL-SYD	2/19/78	103	8:34	-51	FL351	7:37	29.3S	159.1E	FL331	-37.9	7.6	FL310	-30.7	.6	3:24	FL350	-41.6	1.7	4:27
HNL-SYD	2/22/78	106	8:51	-52	FL350	8:15	32.3S	155.1E	FL337	-39.2	7.2	FL310	-30.1	.8	5:19	FL350	-43.1	3.5	2:55
												FL310	-30.3	1.5	3:28	FL350	-44.2	4.2	4:43
												FL309	-30.2	.7	1:45	FL349	-43.2	4.0	6:10

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
HNL-SYD	2/25/78	92	8:29	-48	FL351	8:08	32.0S	155.9E	FL334	-38.7	6.0	FL310	-32.1	1.5	3:17	FL350	-43.3	2.3	4:40		
HNL-SYD	2/27/78	97	8:07	-43	FL352	6:22	24.3S	164.1E	FL306	-31.1	4.2	FL281	-24.4	1.7	1:07	FL310	-31.6	1.6	4:54		
HNL-SYD	4/ 9/77	103	8:49	-45	FL350	7:14	25.1S	163.4E	FL324	-37.5	4.9	FL310	-32.4	1.7	3:24	FL350	-42.5	1.2	3:49		
HNL-SYD	4/11/77	109	9:13	-50	FL390	7:13	23.6S	164.8E	FL336	-39.6	5.4	FL290	-36.5	2.1	1:20	FL349	-41.5	1.1	4:14		
HNL-SYD	4/16/77	106	8:56	-52	FL350	8:51	33.4S	153.6E	FL320	-33.5	7.0	FL310	-32.4	1.9	2:35	FL310	-30.7	1.0	3:56		
HNL-SYD	5/19/77	106	8:56	-46	FL350	8:51	31.7S	151.5E	FL330	-38.1	5.2	FL280	-23.4	1.1	1:15	FL349	-41.1	3.3	3:20		
HNL-SYD	6/13/77	71	8:19	-58	FL351	8:15	31.7S	151.3E	FL335	-41.3	8.2	FL311	-33.3	1.0	3:19	FL350	-42.6	1.3	4:41		
HNL-SYD	9/15/77	99	8:36	-45	FL351	6:21	19.7S	162.6E	FL329	-37.4	5.5	FL311	-32.6	1.8	3:45	FL350	-47.0	5.2	4:04		
HNL-SYD	9/17/77	98	8:44	-48	FL370	8:34	31.7S	152.3E	FL330	-37.2	6.1	FL310	-32.8	1.2	3:51	FL350	-42.8	1.5	4:19		
HNL-SYD	9/19/77	81	8:16	-55	FL350	7:59	29.9S	153.9E	FL330	-39.4	7.4	FL310	-32.7	1.6	2:59	FL330	-37.9	1.5	1:04		
HNL-SYD	9/22/77	98	8:34	-48	FL370	7:34	25.9S	155.3E	FL332	-38.5	6.6	FL350	-41.9	1.6	1:40	FL310	-33.2	1.6	3:02		
HNL-SYD	9/24/77	70	8:19	-49	FL350	6:44	23.3S	158.4E	FL323	-37.1	6.2	FL280	-25.6	1.8	1:05	FL349	-45.3	3.6	3:33		
HNL-SYD	10/10/77	104	8:43	-56	FL350	8:38	31.9S	151.7E	FL328	-37.4	7.1	FL309	-33.5	1.6	2:30	FL349	-42.3	2.4	1:20		
HNL-SYD	10/17/78	102	8:34	-56	FL392	3:50	3.7S	177.9E	FL373	-50.8	4.9	FL310	-32.6	1.7	3:19	FL329	-37.4	1.5	1:09		
IAD-LHR	1/26/78	60	5:07	-65	FL331	3:37	53.1N	27.0W	FL337	-59.9	4.2	FL310	-32.2	1.4	2:30	FL350	-46.0	1.4	2:14		
IAD-LHR	3/31/78	61	5:11	-57	FL360	3:31	50.1N	27.4W	FL352	-50.5	3.7	FL350	-47.2	1.7	1:09	FL350	-47.2	1.7	1:09		
IAD-LHR	4/ 4/79	69	5:39	-64	FL371	3:19	52.7N	33.7W	FL365	-54.7	5.0	FL391	-54.5	1.5	4:44	FL330	-61.9	2.5	3:07		
IAD-LHR	5/25/77	70	5:59	-59	FL360	4:14	51.1N	25.2W	FL358	-52.6	4.6	FL349	-48.4	1.5	1:04	FL359	-51.6	4.3	3:06		
IAD-LHR	5/27/77	68	5:46	-62	FL371	5:41	50.8N	3.5W	FL351	-50.9	6.1	FL350	-54.0	1.0	1:39	FL370	-57.5	4.5	2:54		
IAD-LHR	6/ 7/79	72	5:48	-58	FL370	4:48	53.0N	17.5W	FL348	-50.8	4.4	FL350	-52.5	1.3	1:19	FL360	-52.6	4.7	3:39		
IAD-LHR	6/11/78	71	5:45	-56	FL350	5:05	52.9N	11.8W	FL343	-48.6	5.1	FL350	-50.8	5.8	2:34	FL370	-53.9	3.3	1:39		
IAD-LHR	7/10/78	71	5:49	-56	FL350	4:49	53.0N	15.4W	FL342	-46.6	5.3	FL330	-48.3	1.2	1:58	FL350	-52.3	1.7	1:49		
IAD-LHR	7/26/78	65	5:22	-52	FL330	1:53	47.4N	53.3W	FL347	-46.6	5.3	FL370	-53.4	5.3	1:39	FL350	-49.2	5.8	3:50		
IAD-LHR	7/27/78	69	5:44	-58	FL361	2:14	50.4N	51.3W	FL347	-46.8	4.2	FL330	-48.0	2.3	1:39	FL350	-49.4	4.1	3:30		
IAD-LHR	8/20/77	60	5:09	-53	FL350	0:15	41.5N	72.4W	FL354	-47.6	2.9	FL330	-46.0	3.2	5:11	FL360	-47.3	4.5	2:54		
IAD-LHR	9/10/76	64	5:43	-53	FL349	5:22	52.8N	9.1W	FL347	-47.6	4.1	FL350	-47.0	1.3	1:54	FL370	-52.9	3.7	5:23		
IAD-LHR	9/13/76	69	5:49	-52	FL340	5:00	52.0N	14.5W	FL335	-46.7	3.5	FL349	-48.1	3.7	5:23	FL339	-46.7	3.3	3:10		
IAD-LHR	9/22/77	64	5:48	-61	FL371	4:48	50.1N	15.7W	FL367	-54.4	3.6	FL330	-45.7	2.4	1:39	FL370	-55.3	2.4	4:51		
IAD-LHR	9/24/76	67	5:39	-57	FL390	5:34	51.6N	4.4W	FL352	-50.2	3.1	FL370	-55.3	2.4	4:51	FL349	-50.3	2.5	4:19		
IAD-LHR	10/ 1/78	67	5:34	-39	FL321	2:39	50.3N	44.3W	FL321	-33.1	4.8	FL330	-37.6	1.6	1:34	FL320	-32.6	4.1	2:54		
IAD-LHR	10/ 7/78	64	5:44	-59	FL350	2:44	50.8N	42.1W	FL339	-51.2	4.3	FL330	-49.2	1.9	1:24	FL350	-53.4	3.2	3:34		
IAD-LHR	10/ 8/78	68	5:44	-57	FL371	5:39	51.8N	4.0W	FL347	-51.8	2.6	FL330	-50.9	1.9	1:19	FL350	-52.1	2.6	3:14		
IAD-LHR	10/22/76	69	5:27	-65	FL410	1:55	47.8N	51.4W	FL394	-54.0	6.1	FL370	-52.9	2.1	1:35	FL409	-54.9	6.8	3:21		
IAD-LHR	10/26/76	70	5:30	-63	FL378	1:35	47.7N	56.4W	FL368	-50.9	6.2	FL367	-60.5	2.0	1:04	FL378	-48.8	4.9	3:04		
IAD-LHR	11/ 5/76	63	5:09	-54	FL360	1:53	48.7N	51.6W	FL352	-46.2	4.8	FL330	-49.1	1.4	1:24	FL359	-45.0	5.7	2:50		
IAD-LHR	11/17/78	62	5:19	-58	FL330	0:39	44.2N	68.9W	FL329	-50.1	3.8	FL329	-50.2	3.7	5:09	FL370	-62.0	3.4	4:09		
IAD-LHR	11/23/77	64	5:39	-66	FL371	3:24	53.6N	34.8W	FL358	-58.9	6.2	FL330	-52.0	1.8	1:04	FL319	-53.4	2.9	3:23		
IAD-LHR	12/16/78	66	6:03	-58	FL330	5:20	52.8N	11.1W	FL317	-52.3	3.7	FL309	-48.5	1.6	1:23						
IAH-JFK	1/22/79	53	1:58	-61	FL370	1:13	36.2N	82.4W	FL365	-56.2	4.4	FL369	-57.3	2.4	1:42						
IAH-JFK	2/15/79	23	1:54	-55	FL370	0:24	32.5N	89.8W	FL360	-52.0	6.2	FL369	-54.2	1.6	1:40						
IAH-JFK	3/ 8/79	94	2:09	-58	FL370	0:15	30.8N	91.4W	FL368	-48.6	4.3	FL369	-48.6	4.1	1:54						
IAH-JFK	5/29/79	27	2:04	-57	FL371	1:14	35.5N	83.2W	FL355	-50.6	8.9	FL370	-55.2	1.1	1:34						
IAH-JFK	8/ 1/78	29	2:20	-53	FL371	1:00	36.1N	85.6W	FL363	-49.7	5.9	FL370	-51.5	1.0	2:00						
IAH-JFK	9/ 5/78	24	2:05	-53	FL370	0:09	31.0N	92.1W	FL362	-50.2	5.3										
IAH-JFK	9/13/78	27	2:15	-53	FL370	1:45	36.9N	79.2W	FL363	-49.2	6.2	FL369	-51.3	1.3	1:55						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
IAH-JFK	10/17/78	25	2:05	-59	FL370	1:25	36.7N	81.5W	FL363	-54.2	4.7	FL369	-55.7	2.0	1:45				
IAH-JFK	11/ 1/78	25	1:59	-54	FL370	0:15	31.2N	91.5W	FL365	-49.4	4.5	FL369	-50.4	2.7	1:44				
IAH-MEX	1/22/79	28	1:03	-51	FL351	0:06	28.2N	96.4W	FL343	-46.5	4.9								
IAH-MEX	2/15/79	16	1:14	-58	FL390	0:10	27.6N	96.6W	FL375	-53.8	8.4								
IAH-MEX	3/ 8/79	34	1:00	-59	FL391	0:09	27.4N	96.7W	FL386	-55.5	3.3								
IAH-MEX	5/29/79	14	1:04	-45	FL351	0:05	28.4N	96.2W	FL345	-42.8	2.9								
IAH-SFO	10/13/78	34	2:45	-56	FL390	0:25	30.9N	100.6W	FL382	-53.9	4.5	FL390	-55.2	.5	2:24				
IST-BEY	3/17/75	16	1:05	-62	FL331	0:09	39.5N	30.1E	FL321	-55.6	4.1								
IST-BOM	1/ 6/79	63	4:37	-58	FL369	1:19	34.7N	43.7E	FL360	-55.1	3.9	FL369	-57.1	1.2	2:59				
IST-BOM	2/24/79	229	4:11	-55	FL371	1:07	37.7N	44.5E	FL369	-49.8	3.2	FL370	-49.8	3.2	3:51				
IST-FCO	2/25/79	19	1:30	-57	FL310	0:15	42.4N	25.3E	FL302	-54.5	2.8	FL309	-56.1	.6	1:04				
IST-FCO	3/17/79	20	1:34	-56	FL364	0:04	41.9N	26.7E	FL359	-48.2	3.2								
IST-FCO	7/31/78	16	1:15	-50	FL351	1:00	43.8N	17.8E	FL326	-42.2	6.2								
IST-FCO	8/19/78	11	1:10	-59	FL350	0:34	43.7N	21.7E	FL341	-56.2	4.7								
IST-FCO	9/ 1/78	15	1:09	-50	FL281	0:54	44.0N	18.9E	FL281	-46.7	2.2	FL281	-46.7	2.2	1:09				
IST-FCO	11/26/78	17	1:20	-55	FL309	0:50	43.9N	18.3E	FL307	-53.5	1.8	FL309	-53.9	.7	1:09				
IST-FCO	12/18/78	18	1:24	-52	FL310	0:54	44.2N	20.1E	FL307	-50.1	2.3	FL309	-50.8	1.1	1:15				
IST-FCO	12/21/78	16	1:15	-52	FL310	0:05	41.9N	26.6E	FL310	-51.8	.6	FL310	-51.8	.5	1:09				
IST-FCO	12/24/78	17	1:24	-62	FL389	1:04	43.6N	16.8E	FL365	-54.2	5.8								
IST-FRA	1/ 5/79	26	2:02	-62	FL351	1:47	47.8N	14.6E	FL334	-53.7	4.6	FL350	-56.7	2.6	1:09				
IST-FRA	1/24/76	14	1:09	-55	FL309	0:00	44.1N	20.9E	FL308	-53.0	1.9								
IST-FRA	3/13/75	23	1:50	-63	FL350	0:05	41.7N	26.7E	FL345	-57.2	4.5	FL349	-57.5	4.5	1:39				
IST-FRA	3/20/76	23	1:46	-61	FL351	0:15	42.4N	25.3E	FL348	-56.6	2.2	FL351	-56.7	1.8	1:37				
IST-THR	3/16/79	23	1:49	-43	FL291	0:25	39.6N	34.5E	FL290	-41.3	1.5	FL290	-41.5	.9	1:44				
IST-THR	3/23/76	22	1:54	-48	FL286	0:19	39.9N	33.3E	FL287	-46.6	1.1	FL291	-47.0	.6	1:30				
IST-THR	7/30/78	26	1:56	-45	FL370	0:37	39.1N	36.5E	FL347	-38.3	7.9	FL369	-43.3	.8	1:25				
IST-THR	8/18/78	20	1:38	-44	FL291	0:04	40.3N	31.4E	FL321	-39.5	2.4	FL330	-38.9	1.2	1:14				
IST-THR	8/31/78	21	1:46	-45	FL291	0:05	40.3N	31.2E	FL290	-41.2	2.5	FL291	-41.4	2.3	1:33				
IST-THR	11/22/78	19	1:30	-58	FL370	0:04	39.9N	36.3E	FL366	-55.9	1.7	FL369	-56.1	1.5	1:19				
IST-THR	11/25/78	22	1:37	-55	FL330	0:04	39.5N	35.0E	FL327	-54.0	1.9	FL329	-54.5	.6	1:26				
IST-THR	11/28/78	20	1:35	-62	FL364	0:15	39.8N	33.9E	FL359	-57.7	3.2	FL369	-58.7	1.8	1:09				
IST-THR	12/17/78	18	1:30	-44	FL290	1:15	37.5N	45.7E	FL289	-42.3	1.8	FL290	-42.6	.9	1:24				
IST-THR	12/20/78	21	1:40	-62	FL369	1:34	36.4N	49.0E	FL353	-55.8	6.3	FL370	-59.3	1.7	1:09				
IST-THR	12/23/78	21	1:40	-55	FL331	0:05	40.1N	32.7E	FL327	-52.7	2.9	FL330	-53.6	.7	1:30				
ITO-LAX	1/ 3/78	41	3:19	-60	FL372	3:09	32.9N	122.2W	FL362	-52.7	7.1	FL370	-55.2	3.0	2:49				
ITO-LAX	1/17/79	46	3:36	-55	FL340	1:56	28.3N	134.4W	FL337	-49.1	5.9	FL340	-49.9	4.5	3:21				
ITO-LAX	1/29/78	44	3:34	-55	FL381	2:19	29.1N	131.6W	FL363	-47.3	7.0	FL380	-52.0	2.6	2:05				
ITO-LAX	2/ 2/78	43	3:34	-55	FL381	3:29	32.6N	120.2W	FL383	-48.1	5.0	FL380	-47.0	.9	1:34				
ITO-LAX	2/ 2/79	195	3:37	-62	FL373	0:53	25.1N	145.9W	FL372	-54.9	4.8	FL372	-55.0	4.7	3:22				
ITO-LAX	2/13/76	39	3:39	-51	FL371	0:15	22.6N	151.8W	FL366	-48.7	2.6	FL370	-49.1	1.8	3:19				
ITO-LAX	2/15/76	40	4:09	-58	FL390	1:54	27.0N	140.0W	FL357	-52.0	4.8	FL330	-49.6	3.0	1:33	FL390	-55.3	3.5	2:09
ITO-LAX	3/ 8/79	45	3:38	-55	FL358	3:38	33.5N	120.5W	FL351	-46.1	4.7	FL350	-45.3	2.6	2:02	FL360	-50.1	2.1	2:02
ITO-LAX	3/16/78	43	3:42	-59	FL371	2:02	29.0N	135.6W	FL363	-55.1	5.4	FL370	-57.1	.9	3:00				
ITO-LAX	3/26/79	42	3:50	-63	FL380	3:10	31.8N	125.6W	FL369	-56.6	6.0	FL380	-59.2	3.2	2:36				
ITO-LAX	3/29/79	42	3:44	-64	FL380	2:19	29.7N	133.6W	FL373	-59.3	4.6	FL377	-61.9	1.0	1:00	FL380	-60.5	3.0	1:49
ITO-LAX	4/10/75	46	3:13	-59	FL371	0:46	26.8N	144.4W	FL367	-56.5	5.1	FL371	-57.7	.9	3:00				
ITO-LAX	4/18/78	63	3:21	-60	FL380	1:21	26.3N	140.3W	FL378	-55.6	3.0	FL380	-56.1	2.1	3:03				
ITO-LAX	5/ 1/76	38	3:14	-60	FL388	1:24	27.4N	139.2W	FL377	-56.9	4.5	FL372	-56.0	.4	1:09	FL388	-59.6	.5	1:45
ITO-LAX	5/ 3/76	47	3:49	-58	FL370	2:39	29.8N	130.5W	FL365	-53.3	5.4	FL369	-54.5	1.8	3:29				
ITO-LAX	5/15/75	49	4:05	-56	FL371	3:35	32.7N	125.4W	FL369	-52.8	2.9	FL370	-53.2	1.6	3:49				
ITO-LAX	5/18/78	44	3:42	-59	FL381	1:21	26.1N	140.6W	FL372	-55.1	5.6	FL380	-57.6	.9	3:00				
ITO-LAX	6/ 7/75	45	3:44	-49	FL330	2:04	28.4N	135.9W	FL330	-46.1	1.8	FL330	-46.3	1.3	3:39				
ITO-LAX	6/ 8/78	45	3:44	-55	FL371	0:14	22.5N	151.6W	FL368	-52.7	3.5	FL370	-53.4	.5	3:30				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-BAH	10/10/78	141	11:19		-68	FL411	6:20	47.7N	7.4E	FL383	-56.6	7.3	FL370	-52.5	4.7	4:50	FL410	-63.1	2.9	5:04
JFK-BAH	10/12/78	137	11:29		-66	FL411	8:09	42.5N	24.5E	FL377	-59.0	4.7	FL360	-58.8	3.1	3:20	FL371	-59.8	1.7	3:20
JFK-BAH	11/22/78	124	10:39		-64	FL410	10:24	28.4N	46.2E	FL375	-58.8	3.0	FL411	-62.2	2.5	3:14	FL359	-57.7	3.2	2:49
JFK-BAH	11/25/78	125	10:53		-65	FL360	1:58	49.0N	50.2W	FL372	-61.2	3.9	FL369	-60.7	1.9	3:15	FL410	-58.5	2.5	2:54
JFK-BAH	11/30/78	120	10:18		-68	FL410	8:58	33.4N	38.8E	FL379	-57.8	7.4	FL359	-62.0	2.7	2:49	FL369	-63.5	.9	3:49
JFK-BAH	12/ 7/76	126	10:34		-64	FL450	9:10	37.4N	42.1E	FL386	-55.3	5.6	FL410	-58.8	1.8	2:25	FL409	-63.9	2.7	3:15
JFK-BAH	12/ 8/78	123	10:24		-68	FL410	9:29	31.0N	40.9E	FL377	-51.7	9.0	FL369	-56.4	5.5	6:00	FL410	-57.2	3.2	3:24
JFK-BAH	12/19/78	130	10:54		-64	FL350	1:50	44.1N	49.5W	FL376	-53.9	5.4	FL349	-51.9	5.3	4:49	FL410	-57.2	3.2	3:24
JFK-BAH	12/22/78	125	10:30		-63	FL369	3:10	45.9N	28.7W	FL366	-52.0	8.3	FL450	-61.6	1.5	1:53	FL410	-59.4	3.8	3:44
JFK-CGN	11/ 4/76	64	5:23		-52	FL339	1:15	47.9N	55.8W	FL343	-45.9	4.5	FL350	-43.7	5.6	4:14	FL370	-57.7	5.0	2:35
JFK-CPH	7/ 7/77	75	6:21		-62	FL410	3:16	54.9N	36.2W	FL400	-49.6	5.8	FL350	-53.4	6.8	2:35	FL410	-52.3	1.0	2:49
JFK-CPH	7/11/77	72	6:24		-58	FL370	5:09	61.4N	7.1W	FL368	-51.6	6.5	FL390	-53.4	1.6	1:05	FL369	-58.9	4.1	2:49
JFK-CPH	7/16/77	71	6:14		-55	FL390	0:55	46.1N	64.3W	FL400	-49.9	4.3	FL290	-39.4	2.9	2:35	FL368	-49.0	2.1	1:03
JFK-CPH	8/ 9/77	73	6:11		-62	FL370	4:51	53.5N	8.1W	FL352	-51.2	6.6	FL410	-55.5	3.4	3:59	FL410	-52.4	4.6	3:54
JFK-CPH	8/10/77	74	6:24		-62	FL410	1:25	42.1N	55.7W	FL407	-55.0	5.4	FL390	-49.1	1.1	3:28	FL410	-47.9	2.9	3:54
JFK-CPH	8/22/77	64	5:54		-59	FL370	0:09	42.1N	70.6W	FL397	-52.1	3.8	FL350	-51.3	3.4	3:46	FL369	-55.6	5.5	1:49
JFK-CPH	9/ 3/77	70	5:54		-59	FL386	1:34	49.6N	56.0W	FL397	-51.8	3.7	FL410	-56.4	5.0	3:04	FL400	-53.1	3.4	2:34
JFK-CPH	9/ 4/77	72	5:56		-61	FL410	5:16	55.6N	.9W	FL397	-53.1	3.7	FL390	-51.2	3.2	1:04	FL409	-51.0	3.0	4:09
JFK-CPH	9/ 9/77	73	5:54		-65	FL391	4:54	56.0N	7.1W	FL376	-53.8	5.0	FL370	-54.8	.7	1:19	FL409	-52.2	3.0	4:16
JFK-CTS	2/18/78	135	11:43		-57	FL325	11:43	42.7N	144.2E	FL365	-50.4	2.5	FL369	-53.9	5.0	4:39	FL370	-52.0	1.9	1:54
JFK-CUN	3/ 2/79	33	2:43		-62	FL347	0:09	39.7N	76.4W	FL346	-53.8	5.5	FL350	-50.3	2.7	3:14	FL351	-51.0	2.6	2:04
JFK-DEL	5/ 1/76	148	12:49		-63	FL370	7:44	42.1N	26.4E	FL384	-56.8	4.9	FL390	-49.1	1.1	3:28	FL350	-52.0	1.8	1:39
JFK-DFW	3/28/77	31	2:29		-71	FL431	0:35	38.3N	79.9W	FL425	-60.8	6.6	FL370	-59.2	2.6	4:44	FL410	-58.0	1.8	2:24
JFK-DFW	4/26/79	31	2:17		-63	FL385	0:42	38.3N	81.7W	FL369	-53.9	7.2	FL450	-59.8	2.8	2:00				
JFK-DFW	5/ 2/77	29	2:19		-71	FL429	0:34	38.4N	80.2W	FL422	-66.7	6.4	FL430	-61.6	5.7	2:09				
JFK-DFW	5/ 9/77	25	2:15		-69	FL430	2:04	33.9N	93.1W	FL424	-57.0	7.6	FL390	-57.7	2.4	1:24				
JFK-DFW	5/16/77	10	2:04		-70	FL431	0:15	38.8N	79.1W	FL421	-64.2	5.5	FL429	-67.8	2.3	2:05				
JFK-DFW	12/13/76	34	2:51		-65	FL430	1:30	36.5N	85.6W	FL417	-60.9	6.1	FL429	-58.1	6.6	2:00				
JFK-DFW	12/20/76	36	2:55		-56	FL350	0:05	40.1N	75.5W	FL348	-47.3	5.2	FL430	-65.8	2.9	1:49				
JFK-DFW	12/27/76	31	2:40		-56	FL350	0:30	38.7N	79.0W	FL346	-53.4	2.8	FL349	-62.9	1.6	2:30				
JFK-DHA	2/ 7/79	131	10:40		-65	FL377	3:35	39.4N	26.8W	FL387	-55.2	6.5	FL349	-47.3	5.1	2:45				
JFK-DHA	2/14/79	128	10:42		-63	FL370	2:17	38.2N	44.6W	FL373	-52.4	5.4	FL369	-50.9	5.7	3:08	FL374	-63.7	1.0	1:01
JFK-DHA	2/22/79	131	10:45		-73	FL391	3:29	49.0N	29.1W	FL394	-58.5	7.6	FL389	-58.7	1.9	1:34	FL409	-55.9	4.8	4:15
JFK-DHA	2/24/79	128	10:59		-68	FL370	4:49	48.2N	15.1W	FL376	-56.4	5.1	FL349	-55.4	2.9	1:12	FL369	-49.9	5.2	4:49
JFK-DHA	4/19/79	128	11:01		-68	FL410	5:41	49.1N	.3W	FL389	-58.2	4.9	FL410	-56.7	3.8	3:00				
JFK-DHA	4/21/79	125	10:49		-64	FL370	7:14	40.0N	14.5E	FL371	-55.1	4.4	FL390	-62.7	6.2	5:20	FL409	-52.5	3.0	4:04
JFK-DHA	6/30/79	128	11:01		-62	FL410	7:03	45.4N	18.2E	FL377	-53.0	4.3	FL329	-53.4	1.6	1:19	FL369	-58.3	5.5	5:45
JFK-EZE	5/ 6/79	104	8:59		-63	FL408	7:40	23.2S	57.1W	FL371	-51.9	5.7	FL410	-55.5	3.4	3:25	FL410	-59.4	3.5	5:14
													FL370	-57.1	5.6	5:16	FL370	-60.1	1.9	1:50
													FL349	-53.4	3.4	5:09				
													FL410	-56.2	2.6	3:19				
													FL350	-53.8	1.7	5:38	FL409	-52.9	4.5	4:48
													FL330	-44.5	2.1	1:34	FL369	-49.9	1.5	4:04
													FL389	-56.6	.8	1:29	FL410	-61.3	1.6	1:10

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-EZE	6/17/79	512	8:55	-62	FL391	8:34	30.1S	57.5W	FL377	-53.4	3.3	FL370	-51.3	.8	5:51	FL390	-57.6	1.8	2:49
JFK-EZE	9/23/78	77	6:34	-58	FL391	6:14	9.7S	59.1W	FL355	-48.7	4.9	FL351	-44.3	.8	2:24	FL371	-51.5	.9	3:24
JFK-EZE	11/11/78	102	8:56	-58	FL391	8:46	31.8S	58.2W	FL375	-53.2	2.8	FL370	-52.2	1.7	5:44	FL390	-55.8	.9	2:47
JFK-FAI	11/15/77	73	6:24	-58	FL350	0:15	42.9N	75.9W	FL367	-50.7	3.8	FL350	-55.0	1.8	1:49	FL369	-47.8	2.3	2:00
JFK-FCO	1/6/79	68	6:14	-63	FL369	4:29	53.8N	4.9W	FL333	-54.1	4.1	FL390	-49.5	1.0	1:30	FL331	-54.2	2.6	1:10
JFK-FCO	1/27/76	79	6:33	-70	FL370	4:33	50.5N	12.5W	FL360	-58.8	6.3	FL329	-52.9	.9	1:15	FL370	-60.6	5.9	4:58
JFK-FCO	1/28/76	72	6:23	-69	FL371	3:09	50.9N	29.0W	FL364	-59.9	6.1	FL350	-57.5	.6	1:19	FL370	-63.8	3.8	3:04
JFK-FCO	2/24/79	151	6:49	-65	FL370	5:25	47.6N	6.7W	FL353	-55.5	5.4	FL390	-58.4	5.0	1:03	FL369	-56.8	6.3	1:24
JFK-FCO	3/10/78	78	6:45	-64	FL370	5:29	45.2N	6.1W	FL316	-53.2	4.9	FL330	-54.1	2.7	5:09	FL330	-55.1	1.4	1:19
JFK-FCO	3/16/79	81	6:39	-58	FL331	2:39	46.0N	39.1W	FL334	-50.5	4.5	FL370	-61.1	1.8	1:15	FL331	-52.3	3.9	4:24
JFK-FCO	4/2/77	74	6:22	-62	FL371	2:20	46.8N	43.1W	FL363	-51.8	5.6	FL350	-46.2	3.4	1:35	FL370	-54.1	4.6	4:21
JFK-FCO	4/12/76	71	5:58	-64	FL370	5:13	45.5N	.4E	FL308	-45.6	7.1	FL290	-42.3	3.4	4:33	FL369	-57.0	4.2	1:15
JFK-FCO	5/17/77	63	6:59	-61	FL391	6:49	40.8N	9.2E	FL322	-44.5	5.7	FL290	-41.6	3.8	3:14	FL310	-42.2	.9	1:19
JFK-FCO	5/28/79	77	6:19	-56	FL370	5:04	45.9N	5.8W	FL351	-49.8	4.9	FL390	-51.1	4.6	1:39	FL370	-56.0	0.0	1:09
JFK-FCO	6/9/78	81	6:54	-57	FL370	6:09	46.7N	4.4E	FL341	-49.7	7.4	FL350	-48.1	4.4	4:04	FL369	-56.2	.5	2:19
JFK-FCO	6/18/78	90	7:08	-56	FL365	4:33	42.9N	19.6W	FL334	-46.0	3.1	FL330	-48.4	3.2	3:14	FL330	-46.2	.6	2:14
JFK-FCO	7/29/78	77	6:19	-57	FL370	5:15	46.3N	3.6W	FL336	-46.3	5.8	FL310	-44.4	2.8	1:53	FL350	-45.7	2.3	1:34
JFK-FCO	8/15/76	73	6:21	-58	FL390	5:56	43.9N	6.5E	FL309	-41.1	.7	FL309	-45.7	2.3	1:05	FL330	-44.9	1.9	2:55
JFK-FCO	8/17/78	77	6:24	-61	FL369	5:45	45.5N	2.0E	FL354	-48.5	4.1	FL369	-56.3	1.1	1:09	FL349	-48.0	1.4	5:06
JFK-FCO	8/30/78	74	6:24	-66	FL372	5:04	49.6N	4.4W	FL341	-51.9	5.1	FL330	-48.8	.6	3:45	FL369	-60.2	.6	1:19
JFK-FCO	9/6/77	74	6:24	-56	FL351	1:48	48.1N	49.3W	FL309	-48.2	9.3	FL290	-40.6	1.7	2:14	FL291	-46.0	1.1	2:24
JFK-FCO	9/7/77	72	6:19	-57	FL370	4:54	49.3N	4.3W	FL354	-53.0	3.4	FL371	-64.5	3.0	1:20	FL370	-54.5	.5	1:34
JFK-FCO	9/8/77	76	6:19	-59	FL370	3:59	50.2N	17.1W	FL331	-46.7	5.7	FL350	-53.2	1.9	4:24	FL310	-42.9	1.3	2:59
JFK-FCO	9/20/76	81	6:35	-54	FL370	5:04	46.0N	6.2W	FL363	-54.2	4.3	FL331	-45.9	1.4	1:19	FL370	-55.4	.8	1:24
JFK-FCO	9/22/76	79	6:33	-59	FL370	5:23	45.9N	4.0W	FL331	-43.7	5.7	FL370	-56.0	1.8	4:49	FL370	-56.0	1.8	4:49
JFK-FCO	9/30/77	33	6:04	-59	FL371	5:24	46.2N	.3E	FL349	-50.3	.8	FL309	-38.6	2.0	1:14	FL330	-43.0	1.8	3:30
JFK-FCO	10/24/76	76	6:24	-59	FL389	6:09	40.7N	7.4E	FL352	-50.1	6.2	FL369	-52.8	.7	1:11	FL370	-58.2	.8	1:05
JFK-FCO	10/29/76	81	6:58	-58	FL368	6:43	43.7N	7.6E	FL348	-51.5	4.3	FL331	-42.2	1.5	1:14	FL350	-48.7	.8	2:24
JFK-FCO	11/22/78	74	6:29	-63	FL370	5:29	48.3N	2.5E	FL352	-50.1	6.2	FL370	-57.3	1.4	2:09	FL368	-50.2	3.2	2:59
JFK-FCO	11/25/78	78	6:40	-60	FL371	5:55	44.7N	2.9E	FL369	-50.4	4.0	FL348	-48.2	3.7	1:19	FL389	-52.7	4.2	1:50
JFK-FCO	11/28/78	75	6:14	-64	FL370	5:14	47.2N	2.1W	FL361	-50.7	3.8	FL368	-51.3	2.7	5:31	FL368	-51.3	2.7	5:31
JFK-FCO	12/4/78	80	6:06	-63	FL370	6:01	43.7N	7.5E	FL347	-57.6	3.0	FL329	-56.3	1.2	1:19	FL349	-57.7	1.9	2:59
JFK-FCO	12/17/78	80	6:27	-59	FL330	4:22	47.5N	13.7W	FL370	-61.3	1.1	FL329	-53.4	3.3	3:13	FL370	-58.1	1.1	1:15
JFK-FCO	12/20/78	77	6:43	-54	FL290	6:03	44.6N	3.1E	FL332	-52.4	3.7	FL348	-50.1	3.6	2:19	FL369	-59.0	3.6	3:29
JFK-FCO	12/23/78	73	6:19	-56	FL350	5:44	41.0N	4.0E	FL291	-47.0	4.5	FL369	-57.6	3.6	1:04	FL349	-56.5	3.3	1:22
JFK-FRA	1/1/79	75	6:11	-66	FL371	4:07	45.9N	21.7W	FL319	-47.1	4.7	FL330	-53.8	3.1	4:02	FL371	-51.6	1.3	1:04
JFK-FRA	1/9/79	67	23:44	-61	FL351	23:46	50.9N	3.8E	FL368	-59.8	4.2	FL290	-47.0	4.5	6:38	FL329	-48.6	3.2	3:39
JFK-FRA	1/12/79	67	5:30	-61	FL370	4:30	51.9N	8.9W	FL338	-53.5	2.5	FL370	-60.1	3.7	5:54	FL370	-60.1	3.7	5:54
JFK-FRA	1/23/79	213	6:06	-60	FL373	6:01	50.4N	4.6E	FL324	-49.5	4.4	FL340	-54.4	1.1	3:26	FL340	-54.4	1.1	3:26
JFK-FRA	1/26/78	20	1:39	-54	FL350	1:00	46.8N	59.2W	FL323	-48.5	6.2	FL319	-49.4	4.1	3:04	FL319	-49.4	4.1	3:04
									FL335	-50.1	3.9	FL310	-47.0	5.6	4:54	FL310	-47.0	5.6	4:54

## APPENDIX B

## FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-FRA	1/30/76	65	5:45	-68	FL370	3:45	54.0N	18.8W	FL345	-58.5	5.5	FL330	-54.4	2.1	2:54	FL369	-64.5	2.0	2:19
JFK-FRA	2/26/77	44	5:39	-64	FL350	5:21	50.3N	6.1W	FL348	-50.5	5.7	FL349	-51.0	5.4	5:17				
JFK-FRA	2/27/79	274	5:49	-67	FL370	5:37	50.9N	3.4E	FL368	-54.9	7.0	FL350	-52.0	2.4	1:10	FL370	-55.2	7.1	4:14
JFK-FRA	3/ 1/77	44	5:07	-63	FL370	4:04	51.6N	17.0W	FL356	-52.4	8.1	FL350	-47.7	5.8	2:54	FL369	-60.4	4.5	1:49
JFK-FRA	3/ 1/79	116	5:46	-60	FL351	4:24	52.8N	11.6W	FL359	-53.0	3.6	FL350	-55.7	2.3	4:24				
JFK-FRA	3/ 3/79	139	6:05	-66	FL361	1:54	48.5N	52.8W	FL364	-57.7	4.4	FL351	-60.4	1.3	1:24	FL360	-58.4	4.8	3:05
JFK-FRA	3/ 5/79	135	5:58	-67	FL371	4:24	52.0N	12.7W	FL364	-58.9	5.4	FL370	-57.1	4.1	1:19				
JFK-FRA	3/ 6/79	135	5:45	-67	FL370	5:17	51.3N	4.4E	FL368	-57.1	5.6	FL350	-54.5	1.2	1:04	FL360	-57.7	6.1	2:59
JFK-FRA	3/ 7/79	131	5:45	-64	FL361	2:14	52.7N	44.2W	FL364	-53.8	6.0	FL350	-55.4	4.1	2:49				
JFK-FRA	3/18/79	83	6:42	-56	FL296	6:41	50.4N	5.9E	FL323	-49.0	3.4	FL360	-62.0	1.6	2:54	FL370	-50.0	2.7	1:15
JFK-FRA	3/21/79	79	6:29	-61	FL341	3:39	52.8N	33.4W	FL336	-55.6	4.4	FL331	-45.9	4.1	1:19	FL320	-50.5	2.1	3:49
JFK-FRA	3/30/78	63	5:29	-58	FL331	5:14	51.1N	2.2E	FL308	-48.3	4.1	FL331	-56.5	2.1	1:30	FL341	-58.0	2.3	3:24
JFK-FRA	4/ 1/78	58	5:36	-55	FL330	0:14	42.0N	67.8W	FL342	-50.8	2.7	FL289	-45.0	1.2	2:39	FL330	-53.9	2.2	1:15
JFK-FRA	4/12/76	67	5:37	-59	FL341	1:47	49.0N	50.0W	FL333	-52.7	5.3	FL330	-50.2	2.2	2:31	FL349	-53.9	2.2	1:20
JFK-FRA	4/14/76	69	5:42	-60	FL363	4:27	52.8N	10.8W	FL336	-52.4	4.0	FL369	-47.9	1.8	1:30				
JFK-FRA	4/15/76	76	6:15	-64	FL371	5:31	51.7N	1.7W	FL347	-55.1	7.0	FL340	-55.1	2.0	3:20	FL370	-49.1	3.0	1:04
JFK-FRA	4/16/76	72	6:07	-65	FL370	5:22	51.8N	2.7W	FL334	-54.1	5.8	FL341	-55.7	2.1	2:37	FL340	-47.3	7.0	1:35
JFK-FRA	4/23/76	78	6:32	-65	FL391	1:22	43.6N	55.7W	FL398	-54.1	6.0	FL330	-54.5	2.5	1:16	FL370	-60.5	2.7	1:17
JFK-FRA	4/23/76	76	6:29	-67	FL411	4:49	48.0N	14.3W	FL402	-53.6	5.7	FL331	-60.7	7.7	1:25	FL321	-51.1	2.0	3:07
JFK-FRA	4/25/79	72	5:54	-61	FL371	4:19	52.5N	16.6W	FL341	-50.4	4.8	FL370	-63.9	1.0	1:15				
JFK-FRA	5/14/77	67	5:49	-55	FL331	3:09	48.9N	30.2W	FL341	-48.7	3.4	FL410	-51.9	4.9	4:44	FL410	-52.8	6.4	4:20
JFK-FRA	5/22/78	72	5:59	-55	FL340	2:59	51.9N	33.5W	FL343	-49.8	3.4	FL331	-48.1	2.3	3:29	FL370	-55.5	4.8	1:45
JFK-FRA	5/23/79	71	5:49	-60	FL365	5:44	50.7N	5.1E	FL344	-48.8	3.7	FL330	-50.3	3.2	3:14	FL350	-46.7	2.8	1:23
JFK-FRA	5/26/77	74	6:09	-55	FL330	4:49	52.1N	10.2W	FL319	-49.4	4.3	FL330	-46.8	2.2	1:09	FL340	-50.8	3.3	3:00
JFK-FRA	5/27/77	70	6:01	-56	FL331	4:42	49.8N	10.4W	FL328	-48.2	5.7	FL370	-50.6	1.5	1:15				
JFK-FRA	6/ 7/78	68	5:54	-55	FL340	2:09	49.8N	46.7W	FL344	-49.9	3.9	FL340	-48.6	2.4	3:14	FL310	-47.6	2.6	2:54
JFK-FRA	7/11/76	71	5:50	-59	FL371	5:35	51.1N	2.4E	FL321	-46.4	5.6	FL330	-49.9	2.8	1:19				
JFK-FRA	7/15/76	59	5:40	-60	FL369	5:26	52.1N	5.3W	FL360	-49.2	6.3	FL331	-54.5	5.6	5:11	FL340	-51.0	2.1	3:00
JFK-FRA	8/16/76	72	6:03	-55	FL359	2:36	50.7N	42.2W	FL356	-48.3	5.4	FL369	-47.9	2.0	1:09				
JFK-FRA	8/27/78	73	6:05	-64	FL360	4:05	52.2N	20.6W	FL354	-57.9	4.5	FL311	-44.3	2.1	4:45	FL369	-50.5	6.3	4:05
JFK-FRA	8/28/78	73	6:15	-62	FL351	5:09	49.9N	7.9W	FL345	-55.5	4.6	FL349	-48.3	1.9	1:02	FL358	-49.4	4.5	3:39
JFK-FRA	8/29/78	68	5:37	-55	FL312	2:25	55.8N	42.7W	FL315	-49.3	5.1	FL348	-44.4	1.1	1:08				
JFK-FRA	9/ 2/78	65	5:50	-66	FL370	4:52	53.5N	6.2W	FL335	-58.0	4.5	FL360	-58.8	3.8	3:07	FL350	-57.6	2.9	4:34
JFK-FRA	9/ 3/78	69	6:01	-67	FL371	4:46	51.9N	10.3W	FL343	-59.0	4.7	FL330	-50.3	1.6	1:20	FL330	-52.8	1.5	2:07
JFK-FRA	9/14/76	73	6:23	-53	FL349	4:51	55.3N	12.3W	FL349	-46.8	4.1	FL310	-53.1	1.6	1:17	FL340	-59.1	1.2	2:49
JFK-FRA	9/15/77	69	5:53	-53	FL371	4:43	53.8N	10.7W	FL338	-44.7	5.5	FL369	-65.0	1.0	1:08				
JFK-FRA	9/18/76	70	5:42	-52	FL369	4:45	51.7N	7.3W	FL344	-41.6	6.2	FL330	-54.3	9.9	1:11	FL340	-59.1	2.2	3:14
JFK-FRA	9/18/76	73	5:49	-55	FL369	4:50	51.5N	6.8W	FL340	-42.9	5.0	FL370	-65.1	1.2	1:09				
JFK-FRA	9/19/77	69	5:59	-60	FL370	4:54	51.5N	10.1W	FL341	-52.1	6.5	FL349	-47.9	3.2	4:39	FL370	-52.3	5.5	1:05
JFK-FRA	9/21/77	72	6:14	-59	FL371	5:04	51.9N	8.9W	FL343	-50.9	5.3	FL331	-43.3	3.7	4:19	FL369	-46.1	6.2	2:15
JFK-FRA	9/25/76	69	5:54	-56	FL369	5:39	51.1N	2.3E	FL351	-49.1	3.2	FL330	-39.4	1.9	2:49				
												FL339	-42.8	2.9	3:19				
												FL340	-53.2	1.1	3:29	FL369	-59.1	7.7	1:09
												FL340	-51.3	4.3	3:39	FL370	-56.5	1.7	1:04
												FL329	-47.6	8.8	1:20	FL359	-50.0	1.0	2:54

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-FRA	9/25/76	75	6:10		-59	FL369	5:35	51.0N	.6W	FL338	-50.2	5.1	FL309	-43.6	.7	1:05	FL339	-50.5	2.1	3:20
JFK-FRA	9/27/77	20	4:49		-57	FL370	3:39	53.8N	10.4W	FL342	-52.6	3.2	FL369	-57.1	1.9	1:15				
JFK-FRA	10/ 1/78	68	5:50		-60	FL351	3:09	53.9N	31.5W	FL347	-55.6	3.7	FL330	-50.9	2.1	3:09				
JFK-FRA	10/ 2/78	68	5:42		-62	FL369	4:17	52.9N	12.8W	FL344	-55.1	5.0	FL351	-56.9	1.8	4:50				
JFK-FRA	10/ 5/78	67	5:43		-60	FL371	5:33	53.0N	3.5E	FL336	-51.8	4.1	FL329	-49.5	1.0	1:15	FL339	-55.2	2.6	2:42
JFK-FRA	10/22/76	67	5:31		-51	FL330	4:41	50.1N	6.0W	FL326	-44.5	3.9	FL370	-61.5	.9	1:19				
JFK-FRA	10/27/76	85	7:10		-64	FL390	6:33	50.4N	8.1E	FL343	-49.8	7.2	FL330	-50.6	2.6	4:29				
JFK-FRA	10/27/76	69	5:49		-57	FL368	5:19	51.2N	.8E	FL331	-46.0	5.0	FL329	-45.4	3.2	4:36	FL319	-46.5	2.5	2:54
JFK-FRA	11/ 3/76	64	5:24		-52	FL330	0:09	42.5N	68.7W	FL335	-45.0	3.9	FL389	-62.5	1.3	1:19	FL339	-45.4	1.6	2:54
JFK-FRA	11/24/78	71	5:50		-65	FL361	1:45	48.6N	52.3W	FL348	-60.0	4.7	FL288	-41.8	3.2	1:19				
JFK-FRA	11/27/78	73	6:04		-61	FL361	4:44	53.9N	12.1W	FL334	-52.4	5.5	FL368	-53.9	3.1	1:05				
JFK-FRA	11/30/78	71	5:45		-62	FL370	4:56	50.5N	4.2W	FL335	-52.2	5.2	FL340	-44.6	3.3	3:09	FL360	-62.3	2.8	2:39
JFK-FRA	12/ 1/78	67	5:28		-65	FL370	4:33	50.0N	6.6W	FL348	-52.6	6.3	FL350	-62.5	1.1	1:26				
JFK-GIG	2/11/77	72	8:08		-63	FL370	0:15	37.5N	71.9W	FL381	-54.1	5.3	FL329	-54.8	.5	1:09	FL339	-52.9	2.5	1:04
JFK-GIG	3/27/77	92	7:45		-55	FL370	1:45	22.7N	65.3W	FL360	-50.1	2.8	FL308	-45.2	1.2	1:30	FL327	-54.1	1.5	1:15
JFK-GIG	4/ 9/77	95	8:04		-57	FL370	0:50	33.2N	70.4W	FL368	-51.0	2.1	FL359	-58.3	1.3	1:45				
JFK-GIG	4/16/77	97	7:55		-61	FL370	0:15	37.2N	71.1W	FL368	-52.0	4.3	FL328	-50.7	3.9	4:32	FL409	-59.5	1.6	2:16
JFK-GIG	4/23/77	93	7:59		-61	FL410	5:39	3.2S	51.6W	FL381	-55.0	5.8	FL369	-51.1	2.0	7:44	FL369	-50.8	1.3	5:49
JFK-GIG	5/29/77	89	7:40		-52	FL371	7:06	17.3S	47.1W	FL339	-43.4	7.1	FL370	-52.2	3.8	7:40				
JFK-GIG	8/20/78	93	7:49		-63	FL372	7:44	21.1S	44.8W	FL340	-50.0	8.4	FL369	-53.1	3.6	4:44	FL410	-60.2	.5	2:45
JFK-GIG	11/ 5/76	99	8:20		-61	FL410	7:21	14.8S	48.6W	FL388	-55.1	4.9	FL290	-34.5	1.9	1:49	FL330	-40.1	.6	1:31
JFK-GIG	11/21/76	93	7:56		-62	FL410	6:26	9.7S	48.9W	FL383	-54.5	5.4	FL370	-50.3	.8	3:37	FL370	-58.0	1.2	3:19
JFK-GIG	11/28/76	97	8:05		-63	FL410	7:05	15.5S	48.2W	FL379	-55.2	7.4	FL369	-51.5	1.5	4:13	FL410	-59.7	.7	3:44
JFK-HND	1/ 8/78	147	12:40		-66	FL350	2:54	59.4N	96.6W	FL378	-53.0	5.6	FL369	-51.1	1.3	4:51	FL410	-61.1	.7	2:45
JFK-HND	1/11/78	153	13:00		-66	FL370	3:00	51.5N	100.5W	FL386	-53.4	6.2	FL370	-55.9	.8	2:17	FL330	-42.1	1.6	1:28
JFK-HND	1/14/78	147	12:24		-62	FL350	4:00	61.8N	117.5W	FL377	-51.3	4.7	FL409	-61.3	1.0	3:39	FL369	-58.5	2.6	2:50
JFK-HND	1/17/78	149	12:38		-62	FL350	0:39	45.6N	78.1W	FL379	-50.7	5.4	FL350	-56.3	5.8	2:55	FL410	-47.4	1.3	2:24
JFK-HND	1/21/77	149	12:38		-64	FL350	2:55	56.4N	99.3W	FL381	-53.5	4.0	FL390	-50.4	2.0	3:40	FL370	-60.0	4.0	2:24
JFK-HND	1/28/77	149	12:18		-63	FL350	2:47	56.4N	99.6W	FL377	-50.8	5.3	FL390	-51.3	3.0	2:54	FL410	-47.7	1.2	2:09
JFK-HND	2/10/78	142	12:30		-66	FL370	3:30	58.7N	106.6W	FL380	-54.1	3.8	FL430	-47.6	2.5	2:05	FL369	-56.1	1.6	1:05
JFK-HND	2/12/77	106	12:26		-68	FL375	5:51	65.0N	142.0W	FL383	-54.0	5.4	FL350	-53.4	4.6	4:35	FL409	-47.8	2.4	3:15
JFK-HND	2/12/78	149	12:49		-64	FL350	2:54	55.6N	97.2W	FL381	-53.7	4.8	FL390	-50.2	2.7	3:45	FL369	-55.5	3.6	2:09
													FL349	-53.5	2.0	2:35	FL409	-46.9	2.4	3:20
													FL390	-53.1	1.4	3:09	FL391	-50.9	2.1	3:30
													FL349	-59.4	2.5	1:15	FL369	-55.6	6.8	4:04
													FL390	-53.6	2.5	3:25	FL410	-49.0	1.8	2:58
													FL350	-59.8	3.4	3:24	FL369	-53.4	1.9	3:00
													FL390	-51.7	1.2	1:49	FL410	-48.4	2.3	1:54
													FL430	-51.0	2.4	1:50				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-HND	2/15/77	120	12:41		-64	FL370	2:58	59.7N	97.7W	FL390	-51.6	4.5	FL349	-55.1	4.0	2:04	FL369	-56.4	4.5	3:14
													FL390	-50.8	1.4	2:24	FL410	-48.5	.5	2:26
													FL430	-47.3	.8	1:26				
JFK-HND	2/15/78	141	12:08		-65	FL350	3:04	58.1N	104.1W	FL373	-51.3	5.3	FL350	-57.2	5.0	3:39	FL370	-51.5	2.3	1:19
JFK-HND	2/19/77	89	12:01		-65	FL369	4:08	62.6N	114.4W	FL375	-54.1	5.4	FL390	-47.8	1.7	6:35	FL369	-62.0	3.5	2:30
JFK-HND	2/21/78	145	12:24		-64	FL350	1:50	53.5N	91.1W	FL387	-52.0	4.2	FL349	-54.0	2.7	2:45	FL409	-50.5	1.5	1:30
													FL389	-49.7	1.3	3:56	FL369	-47.5	.6	1:30
													FL350	-54.9	4.9	2:59	FL410	-52.3	1.1	1:40
													FL390	-54.0	2.8	3:15				
JFK-HND	2/24/78	149	12:25		-66	FL350	5:36	62.1N	139.8W	FL368	-52.9	4.6	FL430	-48.2	1.2	2:15	FL390	-51.4	2.5	6:14
JFK-HND	2/26/77	117	12:36		-55	FL350	0:34	44.4N	77.1W	FL375	-50.1	2.5	FL349	-54.5	5.8	5:40	FL370	-50.8	1.8	2:56
JFK-HND	2/27/78	148	12:33		-69	FL390	6:04	62.6N	148.6W	FL381	-53.5	4.2	FL350	-51.6	2.4	2:37				
													FL390	-49.3	2.1	6:16				
JFK-HND	3/ 1/77	46	6:22		-68	FL390	5:43	40.0N	144.7E	FL387	-53.8	6.4	FL349	-54.1	2.0	3:20	FL390	-53.9	5.8	4:49
JFK-HND	3/ 2/78	139	12:09		-67	FL390	11:45	39.1N	143.6E	FL382	-55.9	4.1	FL410	-51.3	2.0	3:08				
JFK-HND	3/ 4/77	35	5:22		-59	FL350	3:07	61.0N	103.5W	FL350	-52.5	4.6	FL390	-53.8	6.1	6:15	FL390	-56.4	4.3	8:35
JFK-HND	3/ 5/78	145	12:24		-57	FL350	3:54	61.8N	108.5W	FL372	-51.6	3.1	FL370	-53.0	1.7	2:09				
JFK-HND	3/ 8/78	149	12:24		-65	FL350	1:38	50.9N	84.6W	FL375	-53.2	6.1	FL349	-55.2	2.3	3:30	FL390	-50.4	3.2	7:09
													FL350	-53.2	2.2	4:50	FL369	-54.7	2.8	3:15
JFK-HND	3/11/78	144	12:34		-65	FL350	0:30	44.7N	76.8W	FL374	-50.6	4.3	FL349	-61.0	3.3	2:23				
JFK-HND	3/14/78	143	12:27		-64	FL390	8:09	57.4N	179.5E	FL374	-51.7	3.7	FL390	-49.6	4.9	6:13	FL369	-48.6	1.0	1:15
JFK-HND	3/17/78	148	12:44		-55	FL350	2:49	58.9N	94.6W	FL371	-50.5	2.4	FL350	-52.4	6.0	3:45				
JFK-HND	3/23/78	149	12:39		-67	FL390	7:15	62.6N	165.9W	FL376	-51.4	5.1	FL390	-50.0	2.8	7:09	FL369	-53.5	3.3	1:45
JFK-HND	3/24/77	153	13:09		-63	FL350	3:00	55.6N	97.5W	FL382	-50.3	6.6	FL389	-51.2	3.5	6:42				
JFK-HND	3/26/78	144	12:13		-63	FL350	0:09	43.0N	75.9W	FL373	-52.4	4.9	FL350	-51.7	2.2	4:39	FL390	-50.2	1.9	6:24
JFK-HND	3/29/78	147	12:43		-56	FL350	2:03	53.0N	89.9W	FL371	-49.8	2.6	FL349	-50.3	4.1	2:49	FL369	-52.2	.8	1:15
JFK-HND	4/ 1/78	148	12:37		-61	FL351	3:15	58.9N	100.7W	FL377	-49.9	4.2	FL390	-51.6	5.8	7:54				
JFK-HND	4/ 4/78	144	12:19		-62	FL391	11:44	40.6N	145.4E	FL382	-50.3	4.9	FL349	-56.2	5.9	2:45	FL369	-50.3	4.9	2:30
JFK-HND	4/ 6/77	151	12:39		-60	FL430	12:29	37.6N	141.7E	FL391	-49.5	4.5	FL389	-46.0	6.0	4:54	FL431	-53.2	1.6	2:09
JFK-HND	4/ 7/78	152	12:51		-66	FL390	9:30	53.4N	168.1E	FL370	-51.0	5.7	FL350	-59.0	3.5	2:53	FL369	-49.5	.7	2:45
JFK-HND	4/10/77	147	12:30		-60	FL350	8:51	55.2N	172.9E	FL349	-53.5	4.6	FL390	-50.6	3.3	5:59				
JFK-HND	4/10/78	146	12:29		-63	FL391	11:59	39.4N	143.8E	FL373	-51.9	5.8	FL350	-52.3	2.7	3:15	FL369	-49.2	.7	2:34
JFK-HND	4/13/77	146	12:29		-63	FL371	3:15	56.7N	102.8W	FL387	-55.4	4.2	FL390	-48.7	1.8	6:04				
													FL350	-53.9	4.4	3:30	FL369	-49.0	3.6	2:20
JFK-HND	4/13/78	142	12:15		-67	FL390	6:00	61.2N	151.4W	FL376	-54.0	7.9	FL390	-48.2	1.2	2:52	FL409	-48.1	2.4	3:09
JFK-HND	4/16/78	155	12:48		-69	FL390	7:51	58.7N	177.3W	FL380	-56.5	6.4	FL369	-49.8	3.5	2:45	FL390	-49.8	4.7	8:19
													FL370	-44.9	2.2	2:50	FL389	-51.1	1.9	3:54
													FL410	-51.2	2.7	2:04	FL430	-54.0	3.2	2:04
													FL350	-53.6	4.6	3:19	FL369	-47.0	2.4	1:50
													FL390	-51.0	6.4	6:10				
													FL349	-53.5	4.6	12:20				
													FL350	-52.4	6.5	2:49	FL369	-48.8	3.0	3:45
													FL390	-54.2	5.7	5:15				
													FL349	-58.4	1.6	3:00	FL370	-54.0	5.0	1:49
													FL389	-50.8	3.0	2:30	FL410	-56.1	1.9	2:24
													FL430	-58.1	1.1	2:09				
													FL350	-45.9	5.8	2:30	FL370	-51.3	3.2	2:24
													FL390	-58.5	6.2	6:50				
													FL350	-59.2	3.6	1:54	FL369	-55.0	4.3	3:19
													FL390	-58.2	6.9	3:46	FL410	-56.0	6.9	3:04

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-HND	4/17/77	159	13:14	-65	FL410	10:26	49.2N	158.3E	FL383	-54.1	5.2	FL349	-54.9	4.7	3:50	FL369	-48.3	1.7	1:52
												FL389	-51.5	3.8	3:19	FL410	-61.1	3.1	1:11
JFK-HND	4/19/78	150	12:35	-65	FL390	10:40	45.0N	151.4E	FL373	-56.9	5.9	FL430	-57.8	1.1	2:04				
JFK-HND	4/20/77	139	12:45	-63	FL390	5:04	59.5N	132.7W	FL382	-51.5	5.7	FL351	-59.7	3.1	3:50	FL370	-53.6	2.3	1:45
JFK-HND	4/22/78	148	12:36	-64	FL350	1:54	49.0N	92.0W	FL379	-54.9	5.9	FL389	-56.7	6.4	6:30				
												FL350	-55.3	3.3	2:45	FL369	-49.0	2.1	1:19
JFK-HND	4/24/77	150	12:39	-65	FL370	4:10	56.2N	118.8W	FL372	-54.6	5.7	FL389	-52.7	7.1	3:49	FL410	-48.2	3.8	4:13
JFK-HND	4/25/78	146	12:34	-65	FL350	0:54	47.4N	80.3W	FL375	-54.0	5.1	FL350	-61.4	2.6	3:45	FL370	-55.7	3.1	2:10
JFK-HND	4/26/76	150	12:37	-66	FL371	4:19	64.2N	121.2W	FL388	-52.4	5.8	FL389	-48.3	1.1	2:40	FL410	-50.5	2.7	1:54
JFK-HND	4/26/77	151	12:42	-67	FL370	7:06	58.8N	160.7W	FL358	-54.8	6.5	FL430	-57.5	2.5	1:09				
JFK-HND	4/28/78	143	12:30	-63	FL390	8:54	54.0N	169.7E	FL371	-56.4	5.1	FL349	-57.6	2.9	3:50	FL369	-58.0	5.8	1:39
JFK-HND	4/29/77	151	12:45	-62	FL350	0:30	43.0N	78.5W	FL374	-51.4	7.1	FL389	-52.6	5.3	6:40				
JFK-HND	5/ 1/78	145	12:34	-67	FL410	9:34	51.0N	162.2E	FL383	-54.7	5.7	FL350	-58.9	5.2	3:20	FL370	-54.1	1.7	1:19
												FL389	-51.9	3.7	7:24				
JFK-HND	5/ 4/78	140	12:19	-62	FL350	3:09	57.3N	102.1W	FL380	-52.5	5.0	FL350	-47.6	3.1	2:04	FL370	-56.4	5.2	1:54
												FL390	-55.7	6.8	2:15	FL410	-51.7	4.3	5:48
JFK-HND	5/ 7/78	145	12:30	-66	FL370	5:15	59.3N	128.7W	FL371	-54.9	6.2	FL349	-57.9	2.5	4:43	FL369	-55.8	7.8	2:02
JFK-HND	5/10/78	158	13:24	-65	FL412	10:49	48.1N	156.5E	FL383	-54.9	5.6	FL349	-59.6	3.8	1:24	FL369	-49.3	5.9	3:46
												FL350	-57.5	2.2	4:39	FL369	-47.3	1.4	1:05
JFK-HND	5/13/78	144	12:04	-62	FL391	10:19	46.4N	153.6E	FL374	-53.3	5.0	FL390	-57.3	5.6	6:15				
JFK-HND	5/16/78	140	12:09	-72	FL432	11:24	41.0N	146.1E	FL386	-53.6	7.2	FL349	-56.2	6.9	5:50	FL389	-46.8	4.7	2:50
												FL410	-46.1	2.5	3:30				
JFK-HND	5/19/78	145	12:44	-62	FL371	3:49	57.9N	113.7W	FL386	-54.1	5.1	FL350	-59.3	1.2	2:15	FL369	-53.7	4.2	2:25
												FL390	-48.7	1.5	2:45	FL409	-60.7	3.8	2:45
JFK-HND	6/ 1/77	690	12:19	-64	FL430	10:41	45.1N	151.6E	FL396	-54.0	6.2	FL430	-51.9	2.4	1:09				
												FL350	-57.8	2.7	3:05	FL370	-49.4	2.9	2:04
JFK-HND	6/ 3/77	152	12:58	-64	FL430	8:23	53.3N	179.3W	FL392	-54.4	5.9	FL390	-51.4	4.1	2:49	FL410	-50.4	1.0	2:05
JFK-HND	7/ 4/77	139	12:07	-65	FL429	10:11	47.9N	156.1E	FL396	-48.8	5.9	FL430	-54.0	4.4	1:09				
JFK-HND	7/ 8/77	134	11:45	-64	FL410	9:30	50.1N	160.2E	FL378	-51.7	5.8	FL349	-55.0	3.8	2:45	FL370	-56.0	5.9	3:15
												FL389	-53.1	6.5	4:24	FL369	-60.4	1.8	1:19
JFK-HND	7/14/77	143	12:08	-57	FL351	6:45	53.1N	164.2W	FL354	-48.2	4.3	FL351	-51.1	4.9	2:00	FL371	-57.3	5.8	2:04
JFK-HND	7/15/76	140	12:04	-62	FL430	11:54	38.0N	142.5E	FL384	-49.4	4.6	FL390	-51.2	2.1	3:00	FL411	-60.0	4.7	1:54
												FL431	-59.0	1.1	1:50				
												FL351	-55.0	1.3	4:05	FL371	-53.0	1.3	2:10
												FL390	-50.8	6.8	4:20				
												FL350	-52.9	9.9	2:20	FL370	-52.0	4.2	2:30
												FL390	-46.3	2.5	2:39	FL411	-55.6	2.4	2:30
												FL431	-68.1	4.2	1:24				
												FL351	-53.7	1.0	1:54	FL371	-58.1	1.6	1:09
												FL370	-51.0	6.5	2:14	FL391	-53.2	5.1	2:55
												FL411	-54.0	4.4	1:05	FL431	-56.7	1.9	2:09
												FL350	-49.7	2.3	1:12	FL371	-57.3	2.6	2:22
												FL389	-47.9	2.7	3:33	FL409	-49.2	3.3	1:01
												FL429	-60.5	2.7	3:45				
												FL350	-53.0	3.9	2:04	FL370	-50.0	4.9	2:40
												FL390	-52.8	5.6	3:09	FL429	-59.5	2.9	4:24
												FL350	-47.4	1.8	1:47	FL390	-45.8	2.0	2:50
												FL410	-45.4	1.6	2:45	FL429	-57.3	4.2	3:00
												FL350	-51.5	4.0	5:15	FL391	-47.0	1.1	2:15
												FL410	-55.4	5.8	3:45				
												FL350	-49.3	3.9	9:09	FL370	-45.5	1.9	2:39
												FL350	-48.3	2.6	2:54	FL370	-48.3	2.4	1:39
												FL391	-49.0	3.4	3:30	FL410	-49.8	4.2	2:09

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-HND	7/17/77	143	12:20		-61	FL431	12:15	37.4N	141.4E	FL380	-50.3	5.0	FL350	-53.1	3.5	4:15	FL389	-47.2	3.1	5:39
JFK-HND	7/28/77	137	11:59		-64	FL431	11:49	37.8N	142.0E	FL396	-53.0	7.0	FL431	-54.0	3.3	1:45	FL388	-49.8	6.5	5:20
JFK-HND	8/16/77	145	12:38		-65	FL431	11:23	43.5N	149.3E	FL381	-50.4	7.4	FL369	-56.2	4.8	2:10				
JFK-HND	8/19/77	149	12:59		-63	FL430	11:24	44.5N	150.8E	FL382	-52.4	6.0	FL430	-58.7	2.6	2:54				
													FL347	-49.9	3.9	4:50	FL387	-45.0	2.3	3:06
													FL408	-48.2	4.5	1:48	FL430	-62.7	1.5	2:04
													FL329	-55.7	1.0	1:15	FL370	-52.2	3.9	2:54
													FL390	-52.2	5.8	2:30	FL410	-47.6	4.8	2:05
													FL430	-60.9	1.5	1:55				
JFK-HND	8/25/77	141	12:17		-64	FL390	6:28	63.0N	155.5W	FL382	-52.3	5.2	FL350	-50.6	2.0	2:09	FL351	-49.6	4.4	1:15
JFK-HND	8/28/77	139	12:24		-64	FL430	12:09	38.4N	142.7E	FL386	-53.9	6.1	FL390	-51.9	5.5	6:00	FL430	-58.2	1.7	1:41
													FL350	-45.7	1.1	2:05	FL369	-55.0	2.8	2:50
													FL389	-57.0	4.5	2:45	FL409	-53.6	1.9	1:54
													FL429	-59.3	3.0	2:00				
JFK-HND	8/31/77	141	12:09		-63	FL430	11:40	39.3N	143.8E	FL389	-53.0	5.8	FL350	-49.0	3.0	3:45	FL390	-55.5	4.3	2:45
JFK-HND	9/ 4/76	142	12:19		-65	FL410	9:14	52.4N	166.7E	FL388	-52.1	4.4	FL410	-51.7	1.7	1:39	FL430	-57.7	2.5	3:07
JFK-HND	9/ 6/77	153	12:45		-65	FL391	5:45	64.6N	142.2W	FL389	-55.2	5.6	FL350	-52.0	1.8	1:50	FL389	-49.4	1.2	3:20
													FL409	-55.7	5.5	3:00	FL429	-54.8	1.4	1:39
													FL350	-54.2	3.8	2:29	FL369	-54.6	1.9	2:30
													FL390	-51.5	8.5	2:10	FL410	-56.1	4.1	2:15
													FL430	-59.8	1.3	2:45				
JFK-HND	9/ 7/76	148	12:43		-64	FL390	5:24	59.6N	137.5W	FL390	-54.4	5.6	FL349	-53.2	1.8	1:05	FL369	-50.8	3.6	2:41
JFK-HND	9/10/77	143	12:24		-63	FL430	11:15	43.4N	149.1E	FL379	-54.5	6.1	FL389	-58.7	4.7	1:03	FL408	-56.0	4.4	6:59
													FL349	-58.2	2.8	2:39	FL369	-54.0	3.5	1:50
													FL389	-49.9	2.9	3:20	FL409	-57.7	1.1	2:05
													FL429	-62.8	1.4	1:04				
JFK-HND	9/12/76	150	12:48		-63	FL430	12:14	39.7N	144.3E	FL391	-51.7	5.5	FL349	-51.9	1.8	3:10	FL390	-55.4	1.5	1:34
JFK-HND	9/13/77	153	13:00		-62	FL430	12:39	38.6N	142.8E	FL388	-51.6	5.0	FL409	-47.8	2.9	4:54	FL429	-59.7	3.1	1:45
													FL350	-51.6	3.0	2:50	FL370	-53.5	1.7	2:00
													FL390	-49.1	3.2	2:15	FL410	-49.4	1.9	3:00
													FL429	-57.5	3.2	2:11				
JFK-HND	9/14/76	150	12:58		-58	FL410	11:05	45.9N	153.1E	FL378	-49.9	5.0	FL350	-51.4	3.2	4:55	FL390	-45.4	2.4	3:50
JFK-HND	9/16/77	156	13:12		-61	FL410	9:22	46.2N	174.9E	FL379	-55.1	5.2	FL409	-54.2	2.1	3:32				
													FL349	-53.9	3.3	3:13	FL389	-54.9	4.6	4:00
													FL409	-58.2	1.0	4:08				
JFK-HND	9/20/77	159	13:06		-64	FL370	3:26	60.9N	103.0W	FL387	-55.3	6.2	FL349	-55.5	2.6	2:56	FL389	-53.4	4.8	4:04
JFK-HND	9/23/77	150	13:05		-59	FL370	4:20	61.6N	118.2W	FL378	-51.5	5.1	FL410	-54.5	1.6	2:09	FL429	-61.8	1.1	2:35
JFK-HND	9/30/76	144	12:29		-65	FL410	12:00	40.1N	144.8E	FL385	-50.9	5.1	FL349	-54.6	3.0	3:48	FL369	-55.3	2.3	1:54
													FL389	-48.2	5.5	3:14	FL410	-50.1	2.5	3:24
													FL349	-51.0	2.5	2:55	FL369	-47.5	1.6	2:15
JFK-HND	10/ 3/77	133	12:43		-62	FL410	10:00	49.8N	159.6E	FL383	-56.3	4.8	FL410	-53.0	6.4	5:45				
													FL349	-55.0	5.4	2:45	FL369	-57.8	1.8	2:45
													FL390	-53.0	3.3	2:35	FL410	-59.1	1.6	2:24
													FL430	-60.4	1.7	1:29				
JFK-HND	10/ 6/76	152	12:46		-64	FL410	11:56	41.2N	146.1E	FL376	-52.3	4.2	FL350	-52.0	2.6	5:32	FL389	-51.7	3.2	3:34
JFK-HND	10/ 9/76	150	12:31		-65	FL410	11:16	43.0N	148.5E	FL389	-53.5	4.6	FL409	-54.4	5.4	3:03				
													FL370	-53.6	2.1	2:54	FL389	-49.7	2.2	4:15
													FL409	-57.4	4.8	4:17				
JFK-HND	10/12/76	153	12:43		-61	FL430	12:15	39.8N	143.1E	FL388	-51.6	3.9	FL349	-54.3	2.1	2:30	FL369	-50.7	.9	2:44
JFK-HND	10/15/76	150	12:55		-63	FL370	4:10	61.3N	117.6W	FL390	-55.0	3.9	FL409	-48.7	3.2	3:50	FL430	-55.3	2.6	1:49
													FL349	-52.5	4.8	1:51	FL369	-57.2	3.5	2:19
													FL389	-53.6	2.2	3:50	FL429	-56.5	2.6	3:05

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-HND	10/17/77	145	12:58	-59	FL431	12:23	40.1N	143.6E	FL389	-50.1	3.8	FL369	-49.1	2.1	4:25	FL390	-48.4	3.5	2:24
JFK-HND	10/18/76	153	13:09	-66	FL405	13:05	37.1N	141.0E	FL382	-57.9	4.4	FL410	-48.4	1.3	1:48	FL430	-55.4	2.8	2:33
JFK-HND	10/27/76	155	13:05	-62	FL351	1:29	51.1N	83.5W	FL388	-52.4	5.4	FL349	-55.6	2.9	2:55	FL369	-58.8	4.3	1:25
JFK-HND	10/30/76	151	12:50	-69	FL370	4:43	64.1N	120.7W	FL380	-54.4	5.0	FL389	-58.6	3.2	3:34	FL409	-59.4	3.8	4:35
JFK-HND	10/31/77	138	12:29	-57	FL410	10:34	46.1N	153.1E	FL382	-52.6	2.7	FL350	-57.6	4.4	2:09	FL370	-56.1	4.7	2:50
JFK-HND	11/ 7/76	157	13:36	-63	FL431	13:31	37.1N	140.9E	FL381	-50.7	5.8	FL390	-48.3	3.3	2:06	FL410	-47.8	1.2	2:49
JFK-HND	11/10/76	152	13:03	-66	FL430	12:14	40.8N	145.5E	FL384	-54.2	6.2	FL430	-52.7	4.2	2:15	FL369	-61.1	3.9	2:22
JFK-HND	11/13/76	152	12:59	-62	FL410	10:38	46.9N	154.8E	FL377	-55.2	5.7	FL389	-52.8	2.1	2:45	FL409	-50.2	2.4	2:04
JFK-HND	11/15/76	147	12:38	-62	FL410	12:33	37.8N	140.7E	FL383	-50.0	5.8	FL429	-54.9	1.2	1:09	FL369	-50.4	1.7	2:05
JFK-HND	11/17/76	146	12:35	-63	FL430	11:09	43.4N	149.3E	FL399	-50.5	5.8	FL350	-52.2	3.0	3:05	FL410	-54.9	1.6	3:45
JFK-HND	11/18/77	140	12:35	-67	FL390	5:20	59.5N	139.2W	FL383	-53.2	6.6	FL389	-52.1	1.5	3:05	FL370	-49.4	1.6	2:05
JFK-HND	11/19/76	147	12:39	-60	FL410	11:29	42.4N	147.7E	FL387	-49.9	3.9	FL350	-50.9	6.0	4:15	FL409	-50.5	3.5	2:25
JFK-HND	11/21/77	130	11:05	-67	FL391	4:30	62.6N	149.2W	FL384	-54.5	5.7	FL390	-45.0	1.0	2:10	FL369	-60.3	4.0	2:25
JFK-HND	11/23/76	152	13:00	-57	FL349	0:54	47.3N	80.2W	FL381	-50.3	3.2	FL430	-60.4	1.4	1:39	FL429	-63.3	1.6	1:49
JFK-HND	11/25/76	154	13:16	-61	FL350	0:55	46.1N	79.7W	FL388	-51.6	4.1	FL350	-49.6	1.6	2:30	FL369	-54.1	5.4	2:24
JFK-HND	11/29/76	152	13:09	-63	FL390	5:39	63.7N	136.3W	FL387	-50.9	5.5	FL389	-50.8	3.5	5:38	FL409	-59.3	2.0	3:09
JFK-HND	12/ 1/76	146	12:44	-64	FL370	3:34	59.1N	107.7W	FL390	-50.1	5.5	FL349	-48.5	3.9	3:05	FL369	-45.3	1.1	1:15
JFK-HND	12/ 3/76	152	12:54	-63	FL390	7:45	61.3N	170.2W	FL379	-51.2	4.2	FL409	-55.2	3.6	4:19	FL410	-45.6	1.6	1:35
JFK-HND	12/16/77	143	13:17	-68	FL410	10:42	49.0N	158.0E	FL381	-59.7	3.6	FL429	-47.4	4.9	6:34	FL389	-48.4	2.9	4:35
JFK-HND	12/19/77	148	12:34	-58	FL350	0:24	44.5N	77.8W	FL385	-52.8	3.6	FL389	-58.2	3.8	3:30	FL369	-54.4	8.7	5:04
JFK-IAH	1/22/79	64	2:24	-62	FL391	2:03	32.4N	91.1W	FL383	-51.3	5.8	FL349	-51.8	4.7	4:39	FL390	-47.5	1.3	2:59
JFK-IAH	2/15/79	28	2:19	-57	FL390	2:09	31.5N	92.6W	FL383	-51.6	3.4	FL430	-53.5	2.1	2:30	FL390	-57.8	6.7	4:05
JFK-IAH	3/ 8/79	109	2:15	-52	FL345	0:05	40.0N	76.0W	FL389	-45.7	2.1	FL369	-49.9	2.3	4:19	FL389	-46.2	1.5	2:00
JFK-IAH	5/28/79	30	2:24	-61	FL391	1:30	34.6N	87.1W	FL376	-56.4	5.5	FL410	-49.6	1.1	1:49	FL429	-53.3	1.3	2:35
JFK-IAH	8/ 1/78	27	2:11	-52	FL371	1:46	33.6N	90.3W	FL362	-49.0	2.6	FL349	-51.6	5.8	4:25	FL409	-49.7	1.1	4:24
JFK-IAH	9/ 4/78	26	2:05	-56	FL390	1:55	31.9N	92.0W	FL382	-52.4	4.6	FL429	-55.5	1.4	2:27	FL369	-54.1	4.0	1:49
JFK-IAH	9/13/78	28	2:19	-59	FL390	0:24	37.9N	77.5W	FL382	-54.7	5.8	FL349	-47.8	5.2	3:15	FL410	-51.4	2.4	2:39
JFK-IAH	10/12/78	27	2:04	-61	FL391	0:12	39.4N	77.3W	FL384	-56.3	4.7	FL389	-55.9	4.7	2:21	FL369	-56.4	5.2	2:39
												FL429	-48.3	3.2	2:13	FL409	-50.9	2.5	1:05
												FL349	-43.4	2.0	2:00	FL369	-47.7	2.4	2:39
												FL390	-46.6	2.3	1:35	FL409	-51.4	2.3	4:15
												FL429	-52.8	1.8	2:45	FL369	-57.4	1.5	2:34
												FL349	-50.1	2.5	3:24	FL410	-62.7	3.4	3:27
												FL389	-58.6	2.3	1:49	FL390	-56.1	1.2	2:54
												FL350	-59.8	2.1	3:39				
												FL390	-59.0	1.8	2:54				
												FL350	-53.1	3.1	3:00				
												FL409	-50.4	2.6	5:14				
												FL391	-52.3	5.3	1:59				
												FL390	-52.4	2.1	2:04				
												FL390	-45.6	1.9	1:59				
												FL390	-58.6	2.1	1:40				
												FL370	-50.6	.9	1:20				
												FL390	-53.5	1.0	1:45				
												FL389	-56.7	.9	1:59				
												FL390	-57.2	2.6	0:00				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----				-----FLIGHT SEGMENTS-----			
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM
JFK-LAX	10/16/78	30	2:30	-54	FL351	1:15	37.8N	86.7W	FL345	-48.6	3.7	FL350	-49.4	2.8	2:05
JFK-LAX	11/ 1/78	26	2:15	-59	FL390	2:10	30.8N	91.9W	FL385	-54.0	3.8	FL389	-54.9	1.7	2:05
JFK-LAX	4/ 6/77	24	1:42	-44	FL390	0:04	42.6N	73.3W	FL373	-42.5	1.2				
JFK-LAX	2/12/79	52	4:14	-68	FL391	3:04	38.1N	102.6W	FL365	-60.2	5.0	FL351	-58.3	.8	1:59
JFK-LAX	1/ 1/79	148	4:30	-67	FL390	4:24	35.1N	115.4W	FL380	-53.4	7.2	FL349	-51.5	4.5	2:25
JFK-LAX	1/10/78	54	4:29	-57	FL390	2:04	40.2N	95.1W	FL381	-51.5	3.2	FL389	-52.3	3.1	3:09
JFK-LAX	1/19/78	53	4:24	-61	FL378	1:00	41.4N	84.2W	FL378	-51.0	4.1	FL389	-50.7	3.1	3:14
JFK-LAX	1/19/78	61	4:53	-65	FL404	1:19	40.5N	86.1W	FL406	-56.0	5.9	FL403	-61.8	3.1	1:14
JFK-LAX	1/29/78	52	4:30	-58	FL391	4:09	35.6N	113.7W	FL371	-51.5	3.2	FL350	-49.2	1.3	1:19
JFK-LAX	1/31/78	54	4:50	-57	FL390	2:05	41.3N	93.7W	FL393	-51.6	3.1	FL390	-52.6	2.8	3:00
JFK-LAX	2/ 4/76	49	4:39	-61	FL390	1:39	38.8N	89.6W	FL375	-55.1	4.7	FL349	-57.7	.6	1:09
JFK-LAX	2/ 6/78	53	4:26	-63	FL391	1:59	39.8N	95.6W	FL357	-51.3	5.7	FL350	-49.9	5.0	2:10
JFK-LAX	2/ 9/78	54	4:31	-62	FL351	1:41	40.5N	91.6W	FL360	-53.9	5.3	FL350	-56.8	4.2	2:26
JFK-LAX	2/16/79	58	4:49	-55	FL332	4:49	34.3N	116.6W	FL388	-51.2	1.7	FL390	-51.2	1.5	4:34
JFK-LAX	2/16/79	59	4:50	-58	FL350	2:30	39.0N	97.3W	FL356	-54.0	2.8	FL350	-55.3	1.8	3:24
JFK-LAX	2/25/76	53	4:25	-67	FL390	3:40	36.9N	110.1W	FL382	-58.6	6.1	FL390	-59.3	4.9	3:45
JFK-LAX	2/25/79	56	4:26	-65	FL390	0:34	41.2N	80.5W	FL350	-53.9	6.6	FL389	-55.6	1.4	1:01
JFK-LAX	2/27/78	80	4:42	-59	FL390	2:52	39.8N	100.8W	FL372	-49.7	5.6	FL389	-51.8	3.4	3:18
JFK-LAX	2/28/76	54	4:37	-68	FL390	3:16	37.8N	104.8W	FL365	-60.2	4.4	FL350	-59.8	1.2	2:17
JFK-LAX	2/28/79	53	3:50	-66	FL390	2:45	38.1N	105.6W	FL385	-58.7	4.9	FL390	-59.2	4.0	3:33
JFK-LAX	3/ 9/79	54	3:48	-62	FL351	0:58	40.7N	87.3W	FL358	-55.4	4.1	FL350	-58.2	3.1	1:32
JFK-LAX	3/10/79	203	3:52	-63	FL349	0:04	40.6N	76.9W	FL388	-49.3	3.6	FL390	-48.6	3.1	2:57
JFK-LAX	3/16/78	81	4:37	-67	FL390	3:18	39.3N	105.8W	FL377	-51.1	7.3	FL350	-46.3	1.6	1:20
JFK-LAX	3/23/79	53	3:55	-62	FL370	0:41	41.0N	83.3W	FL379	-49.9	4.4	FL390	-49.0	2.9	3:00
JFK-LAX	3/24/78	53	4:30	-67	FL390	0:34	40.0N	80.4W	FL386	-59.2	5.9	FL390	-59.7	5.4	4:09
JFK-LAX	3/24/79	50	3:47	-59	FL391	2:48	38.0N	106.4W	FL386	-50.5	4.5	FL390	-50.7	4.6	3:27
JFK-LAX	3/26/79	57	3:56	-65	FL390	2:49	37.7N	105.4W	FL375	-58.2	4.3	FL390	-59.6	3.6	2:33
JFK-LAX	3/28/77	56	4:32	-61	FL390	0:37	42.4N	80.6W	FL383	-49.2	6.8	FL390	-49.3	6.4	3:48
JFK-LAX	3/28/79	61	3:59	-66	FL390	1:43	39.3N	94.0W	FL381	-59.7	4.7	FL390	-61.4	3.0	3:08
JFK-LAX	3/31/77	60	5:04	-55	FL391	3:11	39.8N	102.4W	FL377	-49.1	3.6	FL390	-50.1	2.3	2:25
JFK-LAX	4/ 3/77	55	4:51	-60	FL390	4:36	36.3N	115.0W	FL373	-51.0	4.8	FL349	-49.2	1.5	1:09
JFK-LAX	4/ 8/77	48	4:24	-65	FL390	1:59	40.5N	94.6W	FL377	-57.2	6.7	FL390	-60.8	2.8	3:09
JFK-LAX	4/13/77	51	4:19	-65	FL390	1:49	38.5N	93.4W	FL373	-59.1	6.1	FL349	-55.0	.5	1:05
JFK-LAX	4/13/78	55	4:36	-62	FL390	3:16	37.7N	104.8W	FL371	-51.5	5.5	FL350	-46.7	2.9	1:55
JFK-LAX	4/18/78	52	4:19	-58	FL390	4:00	35.6N	114.0W	FL363	-49.1	5.7	FL390	-51.2	5.4	2:30
JFK-LAX	4/21/77	47	4:15	-65	FL390	4:00	35.7N	113.7W	FL376	-56.5	6.5	FL350	-50.2	.4	1:05
JFK-LAX	4/23/77	37	4:20	-65	FL390	2:20	38.9N	98.6W	FL372	-56.8	7.5	FL350	-53.7	2.2	1:15
JFK-LAX	4/24/78	52	4:21	-65	FL390	3:04	39.7N	105.5W	FL378	-54.2	6.6	FL390	-54.6	6.9	3:19
JFK-LAX	5/10/75	49	4:07	-59	FL390	2:31	39.9N	103.1W	FL378	-56.4	2.7	FL390	-56.6	1.9	2:54
JFK-LAX	5/12/79	54	4:24	-57	FL391	4:15	34.4N	114.4W	FL365	-48.6	4.8	FL350	-46.0	1.8	2:25
JFK-LAX	5/16/76	46	4:00	-58	FL390	3:00	37.6N	107.8W	FL378	-48.7	5.8	FL390	-50.1	4.9	3:00
JFK-LAX	5/18/78	52	4:20	-60	FL390	3:54	35.8N	112.7W	FL372	-53.2	4.6	FL350	-50.3	2.5	1:15
JFK-LAX	5/26/78	49	4:05	-53	FL351	3:05	36.9N	107.7W	FL347	-49.3	3.3	FL350	-50.1	1.6	3:45
JFK-LAX	6/ 1/78	57	4:36	-63	FL390	2:16	39.9N	97.7W	FL384	-58.2	6.0	FL389	-59.8	2.0	4:11
JFK-LAX	6/ 6/79	50	4:04	-56	FL390	2:39	37.7N	102.5W	FL367	-51.8	3.8	FL349	-49.8	1.2	1:39
JFK-LAX	6/ 8/78	53	4:18	-62	FL390	3:30	36.8N	108.3W	FL364	-51.8	7.2	FL350	-48.4	3.5	2:15
JFK-LAX	6/ 8/78	51	4:19	-63	FL391	3:20	37.3N	105.9W	FL391	-55.9	5.9	FL391	-54.4	2.0	1:59
JFK-LAX	6/10/77	47	4:18	-57	FL390	1:19	39.8N	88.5W	FL375	-51.7	4.1	FL390	-53.8	1.8	2:54
JFK-LAX	6/11/78	48	3:57	-60	FL391	0:36	39.9N	82.9W	FL386	-56.9	4.7	FL390	-58.0	.8	3:35
JFK-LAX	6/15/78	51	4:24	-66	FL431	4:04	35.7N	113.4W	FL426	-61.1	3.8	FL430	-61.7	3.3	3:59
JFK-LAX	6/17/78	54	4:28	-63	FL420	3:00	34.6N	103.1W	FL392	-56.3	5.4	FL390	-56.0	.5	2:33
JFK-LAX	6/21/79	55	4:29	-57	FL390	0:45	36.3N	82.7W	FL382	-54.0	3.3	FL390	-55.2	1.1	3:39
JFK-LAX	6/22/78	55	4:31	-66	FL431	4:16	35.3N	114.1W	FL414	-59.7	5.3	FL430	-63.6	1.7	2:24





APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-LHR	10/11/77	67	5:57	-55	FL329	4:57	59.9N	8.4W	FL307	-47.1	4.3	FL331	-49.9	2.8	1:27	FL290	-45.9	1.4	2:29
JFK-LHR	10/11/78	66	5:29	-62	FL371	5:09	50.1N	6.9W	FL356	-52.8	4.3	FL329	-50.3	2.3	1:24	FL370	-54.5	3.5	3:34
JFK-LHR	10/15/76	58	4:54	-54	FL350	0:50	45.4N	62.2W	FL351	-46.3	3.5	FL360	-46.6	2.2	2:45				
JFK-LHR	10/18/77	60	5:11	-58	FL371	4:41	52.2N	9.5W	FL348	-49.1	5.5	FL331	-45.7	4.2	2:24	FL370	-53.6	3.2	2:24
JFK-LHR	10/13/78	65	5:20	-62	FL371	3:11	55.1N	34.3W	FL360	-56.6	4.9	FL370	-58.1	3.4	4:01				
JFK-LHR	10/20/78	63	5:19	-58	FL330	0:34	45.7N	66.3W	FL337	-51.5	3.1	FL330	-56.4	1.3	1:04	FL341	-50.0	1.7	3:19
JFK-LHR	10/24/77	58	5:45	-59	FL351	0:46	44.4N	63.2W	FL361	-51.6	4.1	FL350	-52.6	4.5	1:31	FL370	-50.0	4.3	1:07
JFK-LHR	11/ 1/76	55	4:44	-56	FL350	2:15	52.9N	41.8W	FL350	-50.6	4.7	FL370	-52.6	2.2	2:31				
JFK-LHR	11/ 2/76	58	5:00	-58	FL370	3:45	53.1N	21.6W	FL366	-50.7	5.4	FL349	-52.0	4.1	3:49				
JFK-LHR	11/ 2/78	61	4:58	-58	FL350	4:38	52.5N	8.0W	FL330	-51.7	3.4	FL369	-51.1	5.6	4:25				
JFK-LHR	11/ 3/78	66	5:34	-63	FL381	4:24	54.1N	17.6W	FL375	-56.5	4.7	FL329	-51.6	2.1	3:45				
JFK-LHR	11/21/77	71	5:49	-62	FL351	3:29	55.1N	34.3W	FL346	-56.7	4.5	FL370	-59.0	.3	1:24	FL380	-55.2	4.9	3:09
JFK-LHR	12/ 6/78	59	5:04	-57	FL330	5:00	50.4N	4.5W	FL329	-44.3	5.2	FL350	-57.7	4.3	4:45				
JFK-LHR	12/18/76	65	5:19	-60	FL370	2:53	50.6N	35.6W	FL347	-50.8	6.1	FL329	-44.7	4.7	4:54				
JFK-LHR	12/20/76	61	5:09	-58	FL330	0:39	44.9N	63.7W	FL335	-52.6	3.7	FL329	-45.7	3.2	2:33	FL369	-56.3	3.4	2:21
JFK-LHR	12/26/78	64	5:11	-59	FL350	4:51	50.0N	7.4W	FL344	-48.1	6.7	FL340	-52.4	3.8	3:24				
JFK-MUC	10/30/76	87	6:27	-59	FL365	6:22	47.7N	9.5E	FL321	-41.1	5.9	FL350	-50.1	4.9	4:21				
JFK-NRT	1/ 4/79	147	12:36	-68	FL371	4:30	61.7N	120.6W	FL383	-55.2	4.8	FL308	-38.0	1.7	3:20				
JFK-NRT	1/11/79	149	12:44	-63	FL350	4:54	64.9N	124.5W	FL379	-53.0	6.4	FL350	-52.3	3.5	2:54	FL370	-62.4	4.1	2:30
JFK-NRT	1/18/79	159	13:14	-64	FL350	1:54	51.6N	86.6W	FL377	-53.4	5.2	FL390	-54.5	2.1	3:05	FL409	-53.4	1.9	1:54
JFK-NRT	1/23/79	142	12:20	-60	FL350	0:10	42.6N	75.6W	FL381	-47.4	5.3	FL430	-53.5	.9	1:30				
JFK-NRT	1/26/79	140	12:16	-63	FL350	1:45	52.1N	87.7W	FL374	-48.7	5.6	FL350	-59.8	1.9	3:04	FL390	-54.8	5.2	3:15
JFK-NRT	1/29/79	121	10:24	-59	FL350	1:15	49.3N	82.3W	FL373	-48.3	4.2	FL409	-46.1	4.0	3:59				
JFK-NRT	2/ 3/79	146	12:20	-54	FL410	12:05	38.6N	143.1E	FL378	-46.8	3.2	FL350	-57.3	4.0	5:29	FL390	-53.4	1.7	3:19
JFK-NRT	2/ 8/79	151	12:50	-58	FL389	8:39	56.1N	175.5E	FL387	-49.8	4.7	FL410	-48.5	3.9	3:44				
JFK-NRT	2/25/79	144	12:15	-63	FL350	2:49	58.8N	94.5W	FL379	-50.8	5.8	FL350	-50.4	5.9	5:19	FL390	-43.1	1.5	2:45
JFK-NRT	2/28/79	146	12:19	-68	FL350	2:45	55.4N	96.5W	FL383	-50.4	8.5	FL410	-44.3	1.8	1:30	FL430	-47.5	3.3	2:05
JFK-NRT	3/ 3/79	64	5:15	-62	FL351	3:30	60.7N	102.1W	FL348	-56.4	4.5	FL350	-50.8	6.9	5:37	FL390	-46.0	2.9	2:49
JFK-NRT	4/ 3/79	147	12:35	-62	FL378	5:40	65.2N	142.1W	FL377	-51.7	4.5	FL410	-47.1	2.2	3:00				
JFK-NRT	4/ 6/79	147	12:35	-67	FL431	12:30	36.9N	142.0E	FL379	-53.4	4.8	FL350	-50.2	5.2	4:39	FL390	-46.9	1.7	3:40
JFK-NRT	4/16/79	144	12:19	-61	FL350	1:30	50.6N	84.6W	FL375	-51.5	4.8	FL410	-44.6	.8	1:05	FL390	-46.3	2.8	2:34
JFK-NRT	4/22/79	151	13:00	-65	FL431	12:39	38.6N	143.1E	FL381	-53.1	5.6	FL350	-44.8	.8	4:34				
JFK-NRT	4/27/79	148	12:50	-64	FL390	5:20	66.2N	135.4W	FL385	-52.6	5.5	FL409	-50.2	2.5	3:49	FL369	-44.5	.5	1:04
												FL350	-44.1	.8	1:05	FL389	-50.1	4.3	4:49
												FL409	-55.1	1.4	1:04	FL429	-54.6	1.2	2:15
												FL349	-57.3	2.3	4:39	FL389	-46.4	2.2	2:50
												FL409	-46.6	2.6	4:11				
												FL350	-64.1	1.9	2:39	FL370	-51.3	4.7	2:54
												FL389	-43.4	2.7	3:04	FL409	-45.1	1.3	1:30
												FL430	-44.6	.9	1:25				
												FL350	-56.7	4.0	5:00				
												FL350	-54.1	2.7	5:24	FL389	-50.5	5.1	3:24
												FL410	-49.0	3.0	3:15				
												FL350	-56.4	3.8	4:55	FL389	-50.8	1.3	3:55
												FL410	-49.8	1.6	2:00	FL431	-59.8	3.7	1:05
												FL350	-52.7	5.4	5:14	FL390	-50.2	4.3	3:49
												FL410	-51.6	2.8	2:39				
												FL350	-54.1	4.6	4:39	FL390	-55.4	3.0	3:20
												FL410	-47.1	2.1	2:24	FL430	-57.8	4.2	1:30
												FL350	-52.5	6.0	4:35	FL389	-54.4	4.3	3:09
												FL410	-47.9	4.3	2:24	FL429	-55.5	3.1	2:05



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
JFK-NRT	4/30/79	144	12:17		-67	FL410	9:27	51.2N	162.6E	FL381	-53.3	5.9	FL350	-51.2	5.9	5:12	FL389	-55.7	4.3	2:24		
JFK-NRT	5/ 7/79	147	12:24		-67	FL411	12:09	38.5N	143.0E	FL379	-51.8	5.9	FL410	-54.7	5.6	2:35	FL429	-54.2	5.7	1:30		
JFK-NRT	6/ 9/79	156	12:54		-68	FL430	12:44	37.3N	142.6E	FL380	-51.6	5.5	FL350	-51.8	5.7	4:39	FL369	-48.4	2.4	3:39		
JFK-NRT	6/12/78	143	12:04		-64	FL410	10:34	44.3N	150.4E	FL378	-49.7	6.9	FL410	-56.1	5.6	3:29						
JFK-NRT	6/17/78	148	12:29		-63	FL430	11:59	40.1N	144.7E	FL382	-46.7	6.9	FL350	-49.5	4.1	5:30	FL390	-53.8	2.6	2:49		
JFK-NRT	6/18/79	129	11:10		-59	FL350	2:00	54.7N	88.1W	FL378	-52.9	4.2	FL410	-51.7	3.0	2:00	FL430	-57.2	4.8	1:49		
JFK-NRT	6/24/78	146	12:19		-64	FL428	12:14	37.7N	142.7E	FL382	-51.2	6.8	FL350	-47.7	3.4	3:15	FL369	-51.7	2.2	2:15		
JFK-NRT	6/26/79	379	12:22		-65	FL390	8:10	57.0N	178.4E	FL381	-54.5	7.3	FL391	-44.4	3.7	2:45	FL410	-56.6	7.2	3:00		
JFK-NRT	6/29/78	152	12:47		-59	FL430	12:24	38.9N	143.5E	FL383	-48.7	4.1	FL350	-44.4	4.7	2:49	FL370	-45.7	1.3	1:24		
JFK-NRT	7/ 7/78	144	11:54		-59	FL371	5:00	65.4N	134.9W	FL378	-48.0	5.9	FL391	-44.7	4.7	3:49	FL410	-46.3	3.6	1:45		
JFK-NRT	7/13/78	146	12:08		-59	FL389	8:53	53.5N	168.4E	FL376	-48.7	5.7	FL430	-60.9	1.7	1:25						
JFK-NRT	7/19/78	153	12:32		-59	FL370	5:08	64.4N	133.3W	FL379	-48.8	5.4	FL350	-55.7	2.4	3:07	FL369	-53.5	2.7	2:32		
JFK-NRT	7/25/78	150	12:14		-64	FL410	8:09	56.9N	178.0E	FL383	-51.2	4.7	FL390	-48.6	4.0	2:39	FL409	-54.0	2.1	2:08		
JFK-NRT	7/31/78	150	12:24		-63	FL390	5:54	62.0N	146.7W	FL376	-53.4	5.6	FL350	-55.5	1.0	3:45	FL370	-46.2	4.4	1:45		
JFK-NRT	8/ 6/78	149	12:19		-62	FL391	6:09	61.2N	151.1W	FL380	-51.2	6.0	FL391	-42.9	2.5	2:15	FL410	-53.3	3.9	2:15		
JFK-NRT	8/11/78	150	12:24		-57	FL350	3:49	58.1N	115.6W	FL369	-50.4	3.8	FL430	-59.2	1.8	1:24						
JFK-NRT	8/29/78	150	12:44		-61	FL371	5:15	63.3N	134.1W	FL376	-49.7	6.7	FL350	-53.3	5.2	3:11	FL369	-55.6	6.9	2:47		
JFK-NRT	9/ 1/78	149	12:28		-62	FL370	5:48	64.0N	142.6W	FL375	-51.3	4.9	FL389	-54.6	8.2	2:43	FL409	-52.2	6.2	3:08		
JFK-NRT	9/ 8/78	143	12:30		-63	FL430	11:25	42.7N	147.9E	FL380	-49.0	5.9	FL350	-49.7	1.0	1:50	FL370	-48.6	3.0	4:14		
JFK-NRT	9/24/78	149	12:41		-63	FL391	6:22	62.2N	155.5W	FL375	-53.1	4.7	FL390	-46.0	4.9	2:35	FL410	-49.6	1.7	1:09		
JFK-NRT	9/28/78	147	12:41		-64	FL430	12:06	40.3N	145.2E	FL392	-54.5	4.9	FL430	-53.2	4.1	1:39						
JFK-NRT	10/ 4/78	152	13:09		-62	FL351	2:35	56.2N	98.9W	FL372	-51.5	4.0	FL351	-45.2	4.2	3:39	FL370	-53.5	4.5	2:04		
JFK-NRT	10/14/78	147	12:34		-57	FL391	10:59	44.5N	150.7E	FL364	-52.9	3.2	FL391	-43.5	2.3	2:39	FL410	-53.1	2.5	2:49		
JFK-NRT	10/19/78	157	13:23		-60	FL350	0:10	42.7N	76.7W	FL376	-53.2	2.8	FL349	-45.9	2.6	2:39	FL370	-46.1	1.3	2:00		
													FL388	-50.8	6.3	7:04						
													FL350	-47.1	4.5	2:45	FL370	-51.6	5.6	2:03		
													FL391	-45.3	2.4	3:09	FL411	-53.8	1.9	3:20		
													FL350	-53.7	1.7	2:30	FL370	-49.8	3.6	2:20		
													FL390	-48.9	4.9	2:54	FL410	-52.8	4.2	3:59		
													FL349	-53.6	2.0	2:54	FL355	-46.8	5.2	1:15		
													FL369	-58.9	1.4	1:20	FL389	-53.3	4.3	4:10		
													FL409	-56.5	1.6	2:09						
													FL350	-54.2	2.3	3:34	FL370	-52.8	3.3	1:45		
													FL390	-48.4	7.3	3:15	FL409	-50.8	5.9	3:15		
													FL349	-52.6	1.9	5:14	FL370	-48.6	1.5	1:20		
													FL390	-49.4	3.4	5:24						
													FL350	-48.2	4.7	3:09	FL370	-57.9	2.1	2:09		
													FL390	-44.8	2.9	3:30	FL411	-54.2	2.1	2:40		
													FL350	-55.1	1.3	1:05	FL350	-55.1	1.6	1:37		
													FL369	-57.6	2.3	1:40	FL390	-49.4	3.5	3:09		
													FL410	-48.3	3.0	3:00						
													FL350	-48.0	1.9	3:15	FL369	-49.9	4.2	2:00		
													FL390	-46.2	1.4	2:49	FL410	-46.9	1.4	1:24		
													FL430	-60.6	2.9	1:35						
													FL350	-54.6	4.6	3:39	FL370	-51.7	4.0	1:57		
													FL390	-53.0	4.5	6:34						
													FL370	-59.3	3.3	1:45	FL390	-54.5	1.8	3:21		
													FL429	-54.0	5.7	4:30						
													FL350	-53.9	3.5	5:19	FL390	-50.2	1.7	7:10		
													FL311	-48.3	2.6	1:15	FL350	-53.7	1.5	4:20		
													FL390	-53.9	1.8	5:24						
													FL349	-52.2	2.7	6:17	FL389	-52.0	1.0	2:30		
													FL410	-55.5	1.8	4:10						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
JFK-NRT	10/25/78	152	13:04		-64	FL431	12:54	37.8N	142.8E	FL379	-52.7	4.6	FL350	-51.1	2.3	5:45	FL390	-53.0	4.2	3:50
JFK-NRT	11/26/78	152	13:05		-67	FL390	8:45	57.9N	179.1W	FL375	-55.6	4.0	FL430	-58.3	3.6	1:54				
JFK-NRT	12/ 2/78	158	13:31		-65	FL351	2:16	52.7N	89.2W	FL391	-50.5	7.4	FL350	-56.3	2.2	5:15	FL389	-58.1	5.7	3:19
JFK-NRT	12/ 9/78	146	12:39		-63	FL431	12:09	39.3N	143.7E	FL380	-52.3	5.4	FL410	-53.3	1.6	2:00	FL430	-55.1	.9	1:05
JFK-NRT	12/14/78	153	12:59		-63	FL410	9:49	51.5N	163.4E	FL388	-53.2	5.2	FL350	-60.8	4.1	2:16	FL390	-45.9	5.1	5:45
JFK-NRT	12/23/78	151	12:54		-63	FL350	3:45	61.8N	108.0W	FL373	-55.5	3.2	FL430	-49.4	4.6	3:34	FL369	-48.7	3.7	1:34
JFK-ORD	1/23/79	15	1:09		-62	FL390	0:30	40.8N	79.6W	FL365	-57.8	4.5	FL351	-50.9	4.4	4:09	FL410	-55.8	3.3	2:10
JFK-ORD	1/31/79	14	1:04		-46	FL283	0:00	40.3N	75.0W	FL358	-42.2	2.0	FL390	-50.5	3.2	2:50	FL370	-47.6	2.1	1:54
JFK-ORD	2/ 4/78	15	1:09		-57	FL316	1:09	41.4N	86.0W	FL377	-51.5	2.3	FL430	-56.6	1.9	2:24	FL410	-60.5	2.1	1:54
JFK-ORD	2/13/78	17	1:24		-56	FL333	1:15	41.5N	86.3W	FL363	-50.0	4.6	FL350	-57.7	2.8	5:49	FL390	-54.1	1.3	5:25
JFK-ORD	2/21/79	19	1:30		-64	FL390	0:20	40.6N	77.9W	FL373	-56.6	5.3								
JFK-ORD	2/25/78	14	1:10		-56	FL357	0:10	40.5N	76.6W	FL378	-50.9	3.3								
JFK-ORD	3/13/78	17	1:19		-59	FL391	0:45	41.1N	81.5W	FL384	-56.4	1.4								
JFK-ORD	3/24/78	15	1:08		-64	FL386	0:09	41.6N	76.1W	FL371	-59.9	5.5	FL391	-56.6	1.0	1:04				
JFK-ORD	4/15/78	38	1:09		-51	FL380	1:04	41.2N	85.2W	FL383	-46.0	1.7								
JFK-ORD	5/21/78	13	1:09		-59	FL390	0:14	40.7N	77.3W	FL380	-55.1	7.3								
JFK-ORD	6/ 3/78	14	1:05		-62	FL390	0:15	40.6N	77.5W	FL375	-54.9	7.7								
JFK-ORD	6/18/79	13	1:00		-58	FL391	0:50	41.3N	84.2W	FL376	-54.1	5.8								
JFK-ORD	6/26/78	19	1:18		-56	FL390	0:15	42.3N	78.3W	FL343	-43.0	14.2								
JFK-ORD	7/ 9/77	13	1:01		-55	FL390	0:45	41.0N	82.9W	FL376	-50.9	6.0								
JFK-ORD	7/12/78	13	1:00		-52	FL351	0:19	42.2N	78.6W	FL337	-47.7	5.2								
JFK-ORD	8/11/77	13	1:04		-59	FL410	0:19	40.7N	79.0W	FL392	-54.1	7.5								
JFK-ORD	8/12/78	13	1:00		-53	FL384	0:10	42.0N	77.1W	FL365	-48.2	6.9								
JFK-ORD	8/19/77	15	1:09		-51	FL349	0:04	40.4N	76.3W	FL372	-47.5	4.2								
JFK-ORD	9/22/78	12	1:00		-57	FL391	0:25	42.5N	80.0W	FL370	-50.9	8.0								
JFK-ORD	10/ 9/78	14	1:04		-61	FL390	0:34	41.0N	80.9W	FL370	-57.4	4.9								
JFK-ORD	10/14/78	13	1:00		-52	FL390	0:15	42.2N	77.7W	FL367	-47.4	3.5								
JFK-ORD	10/26/78	14	1:04		-55	FL390	0:10	42.0N	77.5W	FL375	-50.7	4.1								
JFK-ORD	11/12/77	15	1:09		-46	FL375	1:04	41.4N	85.7W	FL375	-43.3	1.5								
JFK-ORD	11/25/77	14	1:09		-57	FL381	0:05	40.4N	75.9W	FL381	-54.5	3.2								
JFK-ORD	12/ 8/78	16	1:15		-60	FL390	0:20	42.2N	78.0W	FL370	-54.7	8.1								
JFK-ORD	12/ 9/78	16	1:20		-58	FL390	0:15	42.1N	77.3W	FL376	-50.9	6.8								
JFK-ORD	12/12/78	14	1:05		-57	FL399	0:55	41.3N	83.6W	FL381	-52.8	2.4								
JFK-SEA	8/ 7/77	57	5:05		-59	FL370	4:45	48.2N	120.7W	FL357	-51.0	5.7	FL350	-48.3	1.5	2:15	FL369	-55.6	2.3	2:25
JFK-SFO	1/ 5/77	54	4:38		-53	FL330	0:04	42.1N	76.3W	FL374	-47.7	2.3	FL390	-46.9	1.4	2:52				
JFK-SFO	1/ 7/79	60	4:55		-62	FL390	0:30	42.7N	78.6W	FL384	-54.3	4.6	FL390	-54.4	4.1	4:15				
JFK-SFO	1/ 9/79	58	4:44		-60	FL390	3:09	41.7N	105.5W	FL374	-53.8	3.7	FL350	-51.5	1.1	1:19	FL389	-55.3	2.8	2:54
JFK-SFO	1/11/79	66	5:13		-65	FL383	4:54	38.0N	118.3W	FL373	-57.3	3.9	FL349	-56.2	.5	1:19	FL390	-58.7	2.5	3:09
JFK-SFO	1/15/78	52	4:32		-58	FL390	2:34	41.5N	102.4W	FL374	-49.4	4.8	FL350	-47.6	1.2	1:03	FL389	-50.7	5.2	2:47
JFK-SFO	1/21/79	59	4:45		-62	FL390	2:55	40.9N	104.0W	FL383	-53.8	5.5	FL390	-54.5	5.0	4:15				
JFK-SFO	1/25/78	55	4:34		-67	FL391	3:14	42.9N	109.6W	FL381	-51.8	8.0	FL390	-51.0	8.2	3:39				
JFK-SFO	1/26/79	55	4:29		-60	FL350	1:29	43.1N	91.5W	FL370	-49.1	6.5	FL350	-56.9	2.3	1:34	FL389	-43.9	2.3	2:24
JFK-SFO	1/27/79	54	4:24		-58	FL351	0:24	42.9N	80.2W	FL374	-47.7	4.2	FL350	-53.7	2.3	1:09	FL390	-44.9	1.4	2:45
JFK-SFO	1/31/77	35	4:30		-69	FL410	4:16	39.2N	117.9W	FL378	-55.4	8.5	FL350	-47.2	.6	1:00	FL390	-52.4	4.1	1:13
JFK-SFO	2/ 1/76	52	4:24		-68	FL390	3:04	41.2N	106.8W	FL380	-56.3	8.4	FL390	-57.8	8.8	3:14				
JFK-SFO	2/ 2/77	60	4:38		-63	FL386	0:05	41.8N	75.6W	FL425	-56.2	2.4	FL429	-56.1	1.9	4:17				





APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAS-ORD	1/ 7/78	27	2:09	-55	FL331	1:45	40.8N	95.0W	FL325	-51.5	3.6	FL330	-52.4	2.0	1:55				
LAS-ORD	1/29/76	24	2:09	-62	FL370	1:00	40.0N	103.9W	FL369	-55.8	6.3								
LAS-ORD	3/ 3/76	23	1:54	-64	FL390	1:45	42.0N	93.9W	FL369	-53.9	6.5								
LAS-ORD	3/25/78	28	2:19	-62	FL370	0:15	37.2N	111.0W	FL363	-55.9	5.1	FL369	-57.1	2.8	2:00				
LAS-ORD	3/27/78	27	2:10	-64	FL370	1:50	41.0N	93.7W	FL361	-59.4	4.9	FL369	-61.5	1.5	1:41				
LAS-ORD	3/30/76	27	2:15	-60	FL370	0:09	37.4N	112.1W	FL385	-49.0	6.3								
LAS-ORD	4/20/76	29	2:07	-57	FL370	1:09	40.7N	101.4W	FL365	-52.8	3.6	FL369	-53.5	2.2	1:52				
LAS-ORD	5/ 6/76	28	2:13	-66	FL392	1:00	39.8N	104.4W	FL364	-60.1	5.9								
LAS-ORD	5/ 8/76	25	2:09	-60	FL370	1:50	40.8N	94.7W	FL359	-56.0	3.8	FL369	-57.4	1.8	1:39				
LAS-ORD	5/14/76	30	2:11	-56	FL370	1:00	40.1N	103.7W	FL353	-49.6	6.5	FL369	-52.7	1.8	1:44				
LAS-ORD	6/ 9/75	24	2:05	-58	FL411	1:50	42.1N	93.9W	FL376	-50.6	5.6	FL410	-54.0	2.4	1:04				
LAS-ORD	9/13/75	26	2:04	-61	FL410	1:54	41.0N	92.1W	FL389	-53.7	6.3								
LAS-ORD	10/20/75	26	2:05	-60	FL371	1:50	42.1N	93.4W	FL362	-55.5	5.4								
LAX-AKL	1/ 6/79	143	12:07	-59	FL390	11:37	32.2S	178.3E	FL365	-49.6	5.1	FL371	-57.4	1.7	1:40				
												FL330	-46.1	5.2	2:22	FL350	-44.5	1.0	2:30
LAX-AKL	1/13/79	142	12:09	-58	FL391	11:59	34.6S	176.6E	FL366	-48.8	4.1	FL370	-48.9	.9	1:20	FL390	-54.1	1.9	5:19
												FL331	-46.3	.6	1:29	FL350	-44.8	1.8	3:15
LAX-AKL	1/20/79	149	12:06	-55	FL390	7:44	7.4S	164.0W	FL367	-48.7	4.5	FL370	-48.2	.5	2:04	FL390	-53.0	1.5	4:45
												FL350	-44.8	1.7	3:40	FL370	-48.6	.6	1:39
LAX-AKL	2/16/79	139	11:49	-62	FL389	10:34	32.4S	173.4W	FL370	-53.7	5.6	FL390	-53.0	1.0	5:11				
LAX-AKL	2/18/79	141	12:09	-63	FL410	10:04	29.2S	167.1W	FL374	-54.0	5.8	FL350	-47.2	2.9	4:10	FL389	-58.2	1.4	6:44
												FL349	-49.7	5.1	4:04	FL369	-50.6	.8	2:19
68 LAX-AKL	4/14/79	143	11:16	-66	FL430	9:36	23.9S	176.7W	FL368	-51.0	5.4	FL389	-57.9	.7	2:39	FL409	-60.9	2.5	2:24
												FL350	-47.5	2.5	2:27	FL370	-48.5	.5	2:25
												FL389	-53.6	1.7	2:19	FL410	-62.9	.5	1:05
LAX-AKL	4/24/79	146	12:14	-61	FL410	11:04	32.9S	174.4W	FL376	-51.5	6.3	FL350	-50.1	2.7	0:00				
												FL350	-45.0	1.4	3:19	FL370	-49.9	.6	1:30
LAX-AKL	5/ 3/79	139	11:54	-65	FL410	10:49	28.9S	179.6W	FL378	-53.8	5.8	FL390	-55.5	.5	2:25	FL409	-58.4	1.1	2:09
												FL350	-48.9	2.3	2:54	FL369	-49.9	.7	2:40
LAX-AKL	5/10/79	136	12:01	-59	FL389	8:41	22.3S	161.1W	FL370	-51.3	5.4	FL389	-54.4	.8	3:04	FL409	-62.8	1.3	2:39
												FL350	-46.8	3.1	4:22	FL370	-48.1	.6	1:35
LAX-AKL	5/21/78	140	12:13	-62	FL390	10:48	26.1S	178.0W	FL373	-53.4	5.2	FL389	-56.2	1.6	5:29				
												FL351	-49.2	3.0	3:53	FL371	-49.2	.6	2:00
LAX-AKL	5/23/78	145	12:02	-61	FL391	10:27	24.3S	176.9W	FL374	-52.9	4.1	FL390	-57.9	3.0	5:45				
												FL351	-49.2	2.8	2:49	FL370	-50.2	.7	2:40
LAX-AKL	6/ 3/78	140	11:53	-62	FL410	11:37	34.4S	176.7E	FL378	-53.4	4.9	FL390	-56.4	1.7	5:56				
												FL350	-47.9	1.0	3:29	FL370	-52.6	.5	1:10
LAX-AKL	6/ 9/78	133	11:32	-60	FL411	9:27	21.9S	175.6W	FL380	-51.6	4.1	FL390	-56.0	.8	4:30	FL409	-58.8	1.7	1:56
												FL351	-47.1	1.8	3:12	FL371	-49.8	.5	1:49
LAX-AKL	6/14/79	292	11:58	-56	FL391	7:59	11.0S	167.3W	FL380	-52.0	5.3	FL391	-54.4	.8	3:39	FL410	-55.5	3.0	2:05
												FL310	-35.8	.4	1:34	FL350	-45.0	.6	1:48
LAX-AKL	6/27/78	136	11:29	-57	FL391	8:49	18.6S	173.3W	FL362	-50.5	4.5	FL369	-49.4	.5	1:54	FL390	-54.4	1.7	6:09
												FL351	-47.5	2.1	3:54	FL371	-51.5	.6	2:29
LAX-AKL	7/ 2/78	143	11:49	-66	FL391	11:49	36.1S	175.5E	FL375	-51.0	6.1	FL391	-55.8	.7	3:19				
												FL331	-41.4	.5	1:30	FL351	-45.2	.6	2:15
												FL371	-49.9	.8	1:25	FL391	-55.6	1.4	4:14
LAX-AKL	7/16/78	139	11:34	-66	FL410	10:24	29.3S	179.9W	FL379	-53.3	7.9	FL410	-57.2	.9	1:45				
												FL351	-44.7	.7	2:54	FL370	-51.6	.6	1:09
LAX-AKL	7/22/78	143	11:46	-61	FL411	8:44	17.6S	172.8W	FL367	-48.8	5.8	FL391	-56.3	.6	3:20	FL409	-62.7	1.5	3:04
												FL351	-44.8	.8	6:09	FL391	-56.2	.4	1:49
LAX-AKL	7/28/78	141	11:30	-56	FL391	10:29	29.5S	180.0E	FL374	-50.4	5.1	FL410	-57.0	2.4	1:54				
												FL350	-45.3	1.0	2:19	FL370	-50.2	.5	2:09
												FL391	-54.3	1.7	5:49				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM	
LAX-AKL	8/ 3/78	136	11:14	-60	FL410	8:19	15.7S	171.6W	FL379	-52.0	5.2	FL350	-45.9	.5	2:54	FL370	-50.2	.6	2:04	
LAX-AKL	8/24/78	133	11:27	-61	FL410	9:27	22.2S	175.7W	FL375	-50.3	6.1	FL390	-55.5	.6	2:34	FL409	-57.6	1.7	2:50	
												FL331	-41.1	1.1	1:19	FL350	-45.1	.7	1:34	
												FL370	-50.8	.4	1:57	FL390	-55.5	.7	3:49	
LAX-AKL	10/ 1/78	135	11:38	-61	FL411	9:53	24.3S	176.9W	FL374	-51.5	5.3	FL410	-53.4	5.2	1:54					
LAX-AKL	10/ 7/78	143	11:59	-60	FL411	8:49	15.2S	171.1W	FL382	-52.7	4.5	FL350	-47.3	2.7	3:43	FL390	-54.4	.9	3:04	
												FL410	-58.0	3.2	2:24					
LAX-AKL	10/22/78	133	11:15	-62	FL390	10:05	28.5S	179.4W	FL368	-51.7	6.0	FL350	-47.2	1.7	3:24	FL374	-51.7	.5	1:15	
LAX-AKL	10/28/78	139	11:40	-60	FL411	9:00	18.1S	173.3W	FL374	-50.6	5.2	FL390	-54.7	.5	3:00	FL410	-56.8	3.5	3:09	
LAX-AKL	11/25/77	122	11:24	-64	FL430	8:39	17.5S	172.7W	FL390	-53.9	5.2	FL331	-43.5	1.4	1:09	FL350	-46.2	1.2	2:31	
												FL369	-50.6	.6	1:54	FL390	-57.4	2.1	5:04	
												FL350	-45.7	.9	4:10	FL391	-54.6	.5	3:13	
												FL390	-51.8	3.8	1:35					
												FL350	-47.6	2.5	2:00	FL369	-50.7	1.0	1:55	
												FL390	-53.6	.7	3:00	FL410	-58.3	.5	1:05	
												FL429	-60.3	4.2	2:34					
LAX-AKL	12/ 3/77	128	11:24	-61	FL410	11:24	35.3S	176.1E	FL379	-51.2	5.3	FL350	-45.5	2.3	3:30	FL369	-47.9	.5	1:19	
LAX-AKL	12/16/78	142	12:21	-67	FL430	11:39	31.4S	178.8E	FL382	-56.9	5.7	FL390	-54.1	.4	3:18	FL410	-57.2	1.3	2:49	
												FL359	-57.8	1.3	1:54	FL370	-51.8	2.3	2:54	
LAX-AKL	12/23/77	149	12:45	-61	FL410	8:00	6.0S	162.4W	FL383	-53.3	5.8	FL390	-55.5	.7	2:54	FL410	-64.1	.8	2:30	
06	LAX-AKL	12/25/77	151	12:32	-64	FL430	11:07	26.6S	178.2W	FL383	-51.9	7.1	FL349	-47.5	2.4	2:45	FL369	-48.4	.5	2:24
	LAX-AKL	12/27/77	146	12:35	-60	FL416	9:19	14.3S	170.7W	FL365	-48.1	5.5	FL391	-54.6	.8	2:10	FL409	-59.5	1.1	4:39
LAX-AKL	12/29/78	139	11:55	-64	FL411	11:45	35.0S	176.5E	FL375	-49.3	6.0	FL350	-44.3	3.1	4:30	FL390	-54.4	.7	2:43	
												FL409	-59.2	.4	2:32	FL429	-60.1	3.1	1:25	
												FL320	-42.6	.9	1:15	FL349	-45.9	3.0	4:04	
												FL369	-46.7	.9	2:39	FL408	-56.1	.8	3:05	
												FL349	-43.1	2.1	4:04	FL370	-47.1	.7	1:40	
												FL390	-52.6	.7	2:21	FL395	-54.2	.8	1:10	
												FL411	-57.8	3.1	1:50					
LAX-AKL	12/31/77	148	12:09	-59	FL408	8:48	11.7S	169.7W	FL387	-54.1	2.9	FL359	-52.0	3.7	3:19	FL389	-53.7	.7	4:54	
												FL409	-56.9	1.4	3:16					
LAX-DEN	1/ 2/78	14	1:03	-60	FL370	0:14	35.9N	115.0W	FL357	-54.1	5.1									
LAX-DEN	2/ 6/76	14	1:04	-48	FL370	0:39	37.7N	110.4W	FL355	-45.5	1.9									
LAX-DEN	2/13/77	17	1:19	-63	FL371	0:10	35.3N	116.1W	FL366	-58.2	5.3									
LAX-DEN	2/15/79	14	1:04	-52	FL345	0:10	35.6N	115.7W	FL355	-46.1	3.5									
LAX-DEN	2/22/79	15	1:10	-56	FL370	1:04	38.8N	106.8W	FL354	-50.1	3.7									
LAX-DEN	3/ 8/78	15	1:15	-67	FL370	1:15	38.8N	106.5W	FL359	-60.7	7.9									
LAX-DEN	3/13/79	43	1:11	-57	FL336	0:04	34.7N	116.8W	FL367	-52.7	2.4	FL370	-64.1	1.3	1:00					
LAX-DEN	3/17/79	14	1:09	-56	FL357	1:09	38.9N	106.5W	FL357	-52.4	3.2	FL370	-52.9	1.8	1:00					
LAX-DEN	3/20/79	14	1:06	-55	FL330	0:51	38.3N	108.8W	FL326	-49.9	3.3									
LAX-DEN	3/22/79	42	1:06	-52	FL346	0:04	35.2N	116.2W	FL368	-45.6	1.4									
LAX-DEN	3/29/78	38	1:09	-58	FL410	0:27	36.9N	113.5W	FL402	-56.3	3.2									
LAX-DEN	4/16/78	14	1:04	-59	FL370	0:49	37.8N	108.7W	FL361	-55.4	6.5									
LAX-DEN	4/18/76	15	1:06	-60	FL370	0:25	36.6N	113.4W	FL361	-55.1	5.1									
LAX-DEN	4/29/78	13	1:05	-58	FL370	0:29	36.1N	112.2W	FL359	-55.2	4.9									
LAX-DEN	5/ 8/77	9	1:03	-61	FL410	0:53	38.4N	108.2W	FL389	-56.4	4.0									
LAX-DEN	5/11/76	16	1:15	-61	FL429	0:30	36.6N	113.1W	FL405	-56.6	6.3									
LAX-DEN	5/14/77	14	1:09	-55	FL360	1:09	39.0N	106.8W	FL393	-47.9	3.3									
LAX-DEN	6/ 5/79	16	1:15	-59	FL370	0:54	38.0N	109.6W	FL362	-55.1	6.2	FL370	-57.1	1.3	1:05					
LAX-DEN	7/ 1/78	13	1:00	-49	FL371	0:15	36.1N	113.9W	FL359	-46.5	3.6									
LAX-DEN	7/ 8/78	14	1:04	-51	FL371	0:39	37.6N	110.7W	FL354	-46.5	7.1									
LAX-DEN	7/18/77	15	1:09	-50	FL370	0:54	38.3N	108.8W	FL358	-46.5	6.4									
LAX-DEN	7/23/77	14	1:04	-50	FL369	0:10	35.8N	114.9W	FL366	-48.3	2.6									



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-HND	1/15/78	116	10:00	-55	FL393	10:00	37.3N	140.6E	FL388	-45.3	4.0	FL369	-44.3	2.9	3:20	FL390	-48.7	2.3	2:45
LAX-HND	1/22/77	117	10:00	-67	FL370	1:50	43.7N	133.8W	FL389	-53.8	5.5	FL410	-43.7	3.3	3:15	FL389	-49.0	1.5	1:45
LAX-HND	2/ 8/78	118	10:16	-58	FL410	9:46	39.3N	143.8E	FL390	-51.2	3.8	FL369	-60.8	3.8	3:04	FL390	-53.8	1.8	1:57
LAX-HND	2/13/78	120	10:12	-61	FL354	10:12	37.0N	141.2E	FL400	-49.7	4.1	FL410	-51.0	1.6	4:19	FL409	-47.0	.6	2:04
LAX-HND	2/16/77	78	10:19	-63	FL370	1:19	40.8N	129.6W	FL396	-50.8	4.7	FL369	-46.4	1.5	2:14	FL389	-48.5	1.2	2:58
LAX-HND	2/16/78	121	10:24	-63	FL350	0:20	36.2N	121.6W	FL379	-52.0	6.7	FL410	-53.2	1.8	4:49	FL429	-49.1	.6	2:00
LAX-HND	2/20/77	76	10:10	-55	FL350	0:07	35.8N	120.7W	FL391	-48.5	3.9	FL390	-48.9	4.6	3:50	FL369	-46.2	2.1	2:09
LAX-HND	2/20/78	111	9:48	-63	FL350	1:44	45.1N	133.0W	FL382	-51.8	5.1	FL429	-50.4	3.2	2:26	FL410	-49.9	2.2	2:30
LAX-HND	2/22/78	117	9:51	-65	FL370	1:20	40.4N	130.6W	FL389	-52.7	4.6	FL369	-57.5	5.2	1:58	FL390	-46.2	3.0	4:00
LAX-HND	2/25/78	112	9:45	-65	FL370	2:35	46.4N	141.2W	FL387	-55.0	4.8	FL410	-48.7	.5	1:34	FL389	-48.5	1.2	2:58
LAX-HND	2/27/77	86	9:56	-64	FL390	0:46	40.8N	124.8W	FL390	-51.8	4.2	FL350	-62.5	1.0	2:45	FL409	-50.3	2.0	4:00
LAX-HND	2/28/78	118	9:49	-65	FL370	0:39	38.4N	124.3W	FL397	-55.5	5.0	FL390	-47.6	1.1	2:24	FL410	-52.0	1.9	4:20
LAX-HND	3/ 2/77	87	10:59	-65	FL369	1:52	43.4N	132.6W	FL381	-54.7	5.8	FL349	-47.0	5.1	1:45	FL389	-52.4	1.1	3:00
LAX-HND	3/ 3/78	114	10:03	-70	FL390	8:18	41.1N	153.9E	FL374	-56.4	7.4	FL410	-51.1	2.2	3:52	FL430	-54.7	3.9	2:19
LAX-HND	3/ 6/78	116	10:00	-67	FL370	1:20	42.5N	126.3W	FL385	-53.1	6.9	FL350	-59.1	3.7	2:24	FL369	-63.2	1.6	1:22
LAX-HND	3/ 9/78	116	9:57	-63	FL391	8:22	44.8N	151.2E	FL374	-52.8	5.9	FL409	-52.9	2.1	1:30	FL370	-57.1	1.5	2:28
LAX-HND	3/12/78	123	10:34	-67	FL390	7:30	51.5N	163.7E	FL378	-51.5	6.0	FL349	-59.5	.5	1:38	FL390	-49.9	3.2	7:49
LAX-HND	3/15/78	128	10:34	-69	FL390	6:05	42.1N	177.9W	FL379	-56.2	8.0	FL389	-52.2	4.5	7:33	FL369	-48.6	1.5	1:32
LAX-HND	3/18/78	116	10:15	-63	FL370	3:00	50.2N	143.5W	FL373	-53.5	6.4	FL350	-55.5	2.2	1:40	FL370	-51.3	7.1	2:35
LAX-HND	3/24/78	118	9:59	-64	FL370	1:24	44.1N	127.6W	FL382	-50.4	5.7	FL390	-57.4	9.0	5:29	FL390	-57.9	5.8	2:45
LAX-HND	3/25/77	127	9:39	-58	FL350	5:48	54.0N	178.0E	FL349	-51.2	3.8	FL369	-55.5	2.2	1:40	FL369	-51.6	8.9	2:39
LAX-HND	3/27/78	116	10:06	-65	FL370	1:49	42.4N	133.5W	FL384	-53.7	5.8	FL390	-57.4	9.0	5:29	FL390	-48.1	3.3	7:39
LAX-HND	3/30/78	117	9:52	-64	FL370	1:42	44.9N	132.4W	FL378	-50.6	5.8	FL369	-65.5	1.1	1:50	FL390	-51.8	4.6	7:51
LAX-HND	4/ 2/78	121	10:30	-61	FL350	1:06	41.1N	124.7W	FL378	-50.8	5.4	FL350	-58.8	2.8	2:45	FL370	-54.9	7.4	2:00
LAX-HND	4/ 5/78	128	10:36	-68	FL390	9:00	44.2N	150.3E	FL374	-54.2	7.9	FL390	-51.0	5.7	5:10	FL369	-47.2	1.9	1:40
LAX-HND	4/ 7/77	116	9:49	-65	FL431	9:34	37.9N	142.1E	FL385	-52.6	3.7	FL350	-56.0	.7	1:30	FL370	-51.3	7.1	2:35
LAX-HND	4/ 8/78	120	10:15	-62	FL390	10:10	37.8N	141.1E	FL373	-52.9	3.6	FL390	-50.5	5.9	6:05	FL370	-57.9	5.8	2:45
LAX-HND	4/11/77	122	10:24	-63	FL370	0:20	36.5N	121.5W	FL394	-54.9	5.5	FL350	-57.0	.5	1:09	FL369	-51.6	8.9	2:39
LAX-HND	4/11/78	125	10:40	-64	FL370	1:41	43.8N	131.2W	FL377	-56.7	4.5	FL390	-55.4	9.2	6:14	FL390	-51.8	4.6	7:51
LAX-HND	4/14/77	125	10:34	-68	FL390	7:09	48.3N	170.6E	FL387	-58.8	7.6	FL350	-59.1	1.3	2:20	FL370	-54.9	7.4	2:00
												FL390	-51.8	2.2	4:45	FL369	-47.2	1.9	1:40
												FL370	-59.4	5.6	1:05	FL370	-54.8	7.2	2:36
												FL350	-51.4	3.8	9:22	FL389	-51.9	1.8	2:39
												FL370	-61.3	2.7	1:50	FL390	-51.8	4.6	7:51
												FL410	-51.4	1.5	2:39	FL370	-54.9	7.4	2:00
												FL350	-57.7	1.4	1:22	FL369	-47.2	1.9	1:40
												FL390	-47.3	1.5	6:04	FL370	-52.2	4.4	2:45
												FL350	-58.4	2.5	1:45	FL389	-47.5	.9	2:20
												FL390	-50.0	4.8	6:24	FL430	-57.3	1.4	1:45
												FL350	-51.2	4.9	2:40	FL369	-57.9	3.5	2:38
												FL389	-56.0	8.7	4:55				
												FL349	-53.4	3.3	2:54				
												FL410	-51.4	1.5	2:39				
												FL350	-54.5	.7	2:24				
												FL390	-52.6	3.4	4:19				
												FL369	-59.1	4.7	3:00				
												FL409	-55.5	2.6	2:35				
												FL349	-57.5	1.8	1:24				
												FL390	-56.5	4.4	6:09				
												FL389	-59.2	7.2	10:15				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-HND	4/14/78	117	10:24	-69	FL390	7:09	44.9N	171.4E	FL378	-60.9	6.5	FL350	-50.8	4.8	1:35	FL370	-61.2	4.3	2:30
LAX-HND	4/17/78	128	10:45	-62	FL350	4:00	54.1N	154.1W	FL358	-53.3	5.8	FL390	-63.8	4.4	5:50	FL369	-51.0	6.2	4:30
LAX-HND	4/19/77	128	10:51	-68	FL390	0:45	36.9N	125.3W	FL396	-61.6	5.0	FL349	-55.3	4.6	5:54	FL431	-59.1	3.0	2:22
LAX-HND	4/20/78	129	10:51	-62	FL390	7:00	53.3N	168.0E	FL378	-52.4	3.7	FL389	-62.9	4.9	7:44	FL390	-52.7	3.3	7:52
LAX-HND	4/21/77	121	10:03	-67	FL389	0:30	38.1N	122.5W	FL389	-51.7	6.5	FL350	-52.4	3.6	2:35	FL389	-48.2	4.0	5:28
LAX-HND	4/23/78	121	10:09	-64	FL369	1:39	45.7N	129.7W	FL379	-54.8	5.3	FL369	-60.3	3.5	1:45	FL389	-54.0	5.0	5:54
LAX-HND	4/26/78	123	9:58	-60	FL411	6:32	53.5N	169.8E	FL385	-52.3	4.1	FL350	-54.2	3.3	2:00	FL390	-47.2	2.6	1:58
LAX-HND	4/27/77	114	10:00	-65	FL390	4:05	50.2N	161.0W	FL377	-55.1	6.8	FL410	-54.2	2.3	4:24	FL389	-54.4	7.4	6:04
LAX-HND	4/28/76	115	10:00	-64	FL430	9:45	38.3N	142.6E	FL409	-54.0	3.7	FL390	-55.3	1.7	4:59	FL430	-52.7	4.5	4:34
LAX-HND	4/29/78	122	10:11	-63	FL411	9:07	42.3N	147.6E	FL382	-53.5	5.9	FL349	-53.9	6.1	3:02	FL389	-48.8	2.9	1:24
LAX-HND	4/30/77	113	9:39	-69	FL410	9:30	37.6N	142.0E	FL390	-49.3	7.0	FL410	-57.0	3.9	4:10	FL389	-44.0	3.6	2:50
LAX-HND	5/ 2/78	121	10:46	-67	FL390	7:00	53.6N	171.1E	FL377	-54.0	6.1	FL369	-53.1	4.9	2:35	FL370	-51.6	5.1	2:49
LAX-HND	5/ 5/78	117	9:59	-63	FL410	9:19	39.7N	144.3E	FL369	-51.6	4.0	FL409	-50.5	7.8	3:49	FL410	-51.1	3.7	1:49
LAX-HND	5/ 8/78	120	10:01	-65	FL390	7:46	42.4N	161.9E	FL375	-55.1	6.5	FL350	-52.4	2.6	4:45	FL390	-49.7	3.4	3:30
LAX-HND	5/11/78	121	10:30	-63	FL391	4:45	41.7N	161.8W	FL375	-55.5	5.9	FL350	-55.0	1.0	1:50	FL370	-53.8	7.8	2:25
LAX-HND	5/14/78	114	9:54	-67	FL392	7:39	49.1N	158.3E	FL375	-52.3	6.9	FL389	-56.3	6.1	5:22	FL371	-52.8	4.9	1:25
LAX-HND	5/17/78	118	10:00	-69	FL412	8:39	44.0N	150.0E	FL378	-55.4	7.6	FL351	-50.5	1.1	2:50	FL371	-46.7	3.3	1:50
LAX-HND	6/ 4/76	68	5:15	-65	FL391	3:18	51.5N	147.2W	FL373	-53.3	6.7	FL391	-59.7	3.0	5:40	FL411	-57.3	1.3	1:15
LAX-HND	6/10/76	131	10:22	-62	FL411	9:10	42.6N	148.2E	FL384	-51.5	6.5	FL351	-48.5	4.2	3:40	FL370	-48.5	6.4	2:09
LAX-HND	7/ 5/77	118	10:06	-63	FL391	1:00	41.6N	125.0W	FL387	-53.8	5.3	FL390	-53.9	4.1	2:54	FL411	-66.9	1.4	1:54
LAX-HND	7/ 9/77	116	9:51	-61	FL391	6:39	46.7N	173.1E	FL377	-54.8	4.4	FL369	-54.4	3.8	2:30	FL390	-52.3	9.7	1:56
LAX-HND	7/17/76	113	9:51	-60	FL410	9:31	38.4N	142.7E	FL389	-50.2	5.4	FL349	-53.2	3.5	2:04	FL370	-43.2	4.0	1:19
LAX-HND	7/18/77	115	10:00	-61	FL389	4:15	38.5N	163.5W	FL379	-54.5	4.6	FL390	-50.6	5.8	1:30	FL410	-54.5	5.3	4:48
LAX-HND	7/29/77	107	9:24	-60	FL410	8:39	41.5N	146.5E	FL389	-50.4	7.0	FL390	-54.0	5.3	9:00	FL370	-55.6	.5	1:35
LAX-HND	8/ 1/77	115	9:42	-61	FL390	2:30	47.2N	142.0W	FL384	-51.9	6.5	FL350	-50.5	1.3	2:25	FL390	-48.1	3.3	4:09
LAX-HND	8/17/77	112	9:40	-55	FL370	3:00	48.9N	149.6W	FL374	-49.2	4.7	FL390	-57.1	3.3	4:51	FL369	-52.9	.6	1:40
LAX-HND	8/20/77	105	9:24	-55	FL370	0:49	41.4N	124.9W	FL367	-48.6	4.0	FL410	-51.6	4.6	2:47	FL389	-45.4	4.4	2:35
LAX-HND	8/26/77	115	10:20	-56	FL391	6:54	53.5N	169.9E	FL381	-49.5	5.0	FL350	-47.1	.6	1:15	FL389	-51.0	6.9	4:17
LAX-HND	8/29/77	109	10:03	-61	FL410	9:48	38.4N	142.7E	FL386	-52.6	4.3	FL389	-57.0	1.7	6:34	FL390	-49.3	3.8	5:30
LAX-HND	9/ 1/77	120	10:14	-62	FL390	1:19	40.6N	131.0W	FL398	-54.4	4.4	FL369	-49.6	6.8	3:06	FL370	-47.3	4.6	3:10
LAX-HND	9/ 2/76	116	10:01	-61	FL390	2:15	47.5N	137.2W	FL389	-51.5	4.9	FL410	-56.0	3.4	3:09	FL410	-53.8	1.5	3:15
LAX-HND	9/ 5/76	120	10:06	-67	FL409	6:43	53.4N	169.7E	FL391	-52.7	4.8	FL349	-49.8	2.3	2:09	FL390	-52.0	2.3	2:40
LAX-HND	9/ 7/77	116	9:49	-64	FL390	4:05	42.1N	160.8W	FL384	-56.8	6.1	FL409	-56.7	1.7	2:45	FL409	-53.7	1.4	4:35
												FL350	-49.3	1.7	1:34	FL409	-55.3	1.6	3:16
												FL390	-58.7	3.4	4:19	FL389	-50.8	2.1	3:00

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-HND	9/ 8/76	116	9:49	-64	FL390	2:40	47.2N	142.7W	FL390	-56.6	5.1	FL349	-51.3	1.2	2:15	FL389	-57.8	5.0	2:49
LAX-HND	9/11/77	109	9:20	-64	FL390	4:04	45.0N	161.8W	FL384	-56.0	4.2	FL409	-56.2	2.3	3:15				
LAX-HND	9/14/77	107	9:31	-62	FL390	2:30	41.5N	143.9W	FL391	-57.2	4.4	FL349	-52.5	.7	1:20	FL390	-56.8	3.8	7:45
LAX-HND	9/24/77	113	10:18	-59	FL390	4:44	44.8N	167.5W	FL375	-50.3	3.8	FL349	-53.4	1.2	2:09	FL390	-57.4	3.0	3:14
LAX-HND	10/ 1/76	123	10:20	-65	FL429	10:10	37.7N	141.8E	FL388	-51.6	6.2	FL409	-59.4	.7	1:22	FL429	-60.8	.8	2:19
												FL349	-49.5	2.4	4:19	FL389	-53.0	2.3	3:06
												FL409	-51.2	4.0	2:25				
LAX-HND	10/ 7/76	117	9:58	-60	FL410	9:29	39.1N	143.5E	FL396	-52.3	4.9	FL349	-49.8	4.5	2:10	FL369	-53.7	1.9	1:10
LAX-HND	10/10/76	118	10:36	-61	FL410	7:30	51.4N	164.4E	FL387	-52.1	4.4	FL390	-46.9	1.9	2:39	FL409	-51.3	1.5	1:15
												FL429	-59.6	3.8	2:14				
LAX-HND	10/13/76	118	10:05	-67	FL410	9:50	38.2N	142.5E	FL383	-54.1	6.3	FL389	-51.5	4.0	5:00	FL409	-54.5	3.4	4:35
LAX-HND	10/16/76	119	10:11	-65	FL390	8:11	46.8N	154.6E	FL373	-54.6	4.7	FL369	-51.7	2.7	3:39	FL389	-50.3	2.8	2:41
LAX-HND	10/18/77	122	10:45	-64	FL450	10:30	38.2N	141.1E	FL390	-51.3	4.8	FL409	-54.5	4.7	3:30				
												FL349	-52.3	1.3	1:39	FL369	-58.7	1.7	2:04
LAX-HND	10/19/76	117	9:54	-67	FL410	8:33	43.6N	149.4E	FL391	-57.2	5.6	FL390	-48.2	2.5	2:49	FL409	-58.0	6.5	2:54
LAX-HND	10/19/77	122	10:45	-61	FL390	2:15	48.2N	134.0W	FL394	-52.5	5.1	FL349	-55.2	1.4	3:09	FL389	-55.4	4.8	5:41
												FL369	-55.3	1.1	1:29	FL390	-50.6	3.6	5:00
LAX-HND	10/28/76	126	10:30	-63	FL370	1:25	44.4N	127.9W	FL390	-52.2	5.6	FL410	-48.9	2.6	2:25				
												FL389	-54.9	4.0	3:50	FL409	-61.1	4.8	4:10
LAX-HND	10/31/76	121	10:24	-62	FL370	1:09	42.6N	126.0W	FL389	-52.5	4.8	FL350	-55.3	3.9	1:39	FL390	-52.3	5.2	4:00
												FL409	-49.7	2.3	2:50	FL430	-57.2	1.3	1:35
LAX-HND	11/ 1/77	121	10:49	-65	FL390	6:15	40.8N	176.3W	FL379	-55.0	5.7	FL369	-59.6	3.3	3:00	FL390	-47.0	1.7	3:05
												FL410	-50.8	2.0	3:54				
LAX-HND	11/16/77	130	11:08	-68	FL390	4:00	51.4N	151.7W	FL385	-57.1	6.5	FL369	-54.6	5.0	3:45	FL390	-52.1	3.8	2:44
												FL410	-51.7	3.6	2:04	FL429	-49.3	2.8	1:09
LAX-HND	11/19/77	122	10:30	-62	FL370	1:00	38.1N	126.7W	FL385	-52.3	5.9	FL349	-48.0	.5	2:15	FL370	-54.0	2.2	2:04
												FL390	-59.3	4.2	4:15	FL410	-57.6	.5	1:39
LAX-HND	11/22/77	116	10:21	-61	FL349	0:49	39.7N	123.7W	FL393	-54.4	3.0	FL349	-55.4	1.9	3:00	FL390	-55.7	7.2	4:42
												FL429	-62.8	1.8	2:19				
LAX-HND	11/26/76	116	10:04	-65	FL390	1:35	41.3N	132.9W	FL400	-54.0	6.5	FL370	-59.9	2.0	2:48	FL390	-47.2	2.8	3:09
												FL409	-51.2	2.3	3:15				
LAX-HND	12/ 4/76	116	10:06	-66	FL390	3:09	45.2N	147.6W	FL389	-53.6	6.7	FL369	-54.9	2.8	2:00	FL390	-53.5	2.7	2:47
												FL409	-55.4	1.8	2:05	FL430	-53.1	1.6	1:54
LAX-HND	12/14/77	86	7:29	-63	FL410	6:58	39.7N	144.3E	FL389	-54.8	5.3	FL390	-54.8	8.8	4:15	FL409	-51.8	2.3	2:09
LAX-HND	12/17/77	128	10:48	-73	FL390	6:05	54.0N	179.5E	FL381	-56.6	7.8	FL429	-54.6	1.7	2:19				
												FL369	-60.3	1.1	1:34	FL390	-55.6	6.5	4:11
LAX-HND	12/20/77	119	9:53	-59	FL350	1:16	40.2N	130.4W	FL382	-51.1	4.5	FL410	-47.3	2.8	3:15	FL410	-57.4	3.0	2:45
												FL390	-57.6	1.6	2:22	FL370	-57.5	5.5	2:20
LAX-HNL	1/ 2/79	17	1:20	-42	FL350	0:00	24.7N	146.8W	FL348	-40.6	1.9	FL350	-51.6	1.9	2:39	FL409	-54.4	4.9	3:45
LAX-HNL	1/ 2/79	57	4:39	-56	FL362	1:24	31.2N	131.8W	FL371	-48.3	5.1	FL389	-71.6	1.1	1:15	FL390	-50.8	3.8	4:12
LAX-HNL	1/ 4/78	61	4:52	-61	FL361	0:49	32.7N	126.3W	FL358	-55.7	5.2	FL410	-47.2	2.9	2:25				
LAX-HNL	1/ 9/77	56	4:40	-60	FL350	1:05	33.4N	130.5W	FL348	-49.2	7.0	FL350	-53.7	1.0	1:34	FL380	-46.1	2.4	2:49
LAX-HNL	1/16/79	53	4:32	-61	FL360	1:52	29.6N	137.0W	FL357	-50.8	5.8	FL360	-56.3	4.2	4:31				
LAX-HNL	1/17/78	60	5:00	-47	FL352	0:10	32.0N	120.7W	FL354	-44.6	3.3	FL350	-49.2	7.0	4:24				
LAX-HNL	1/17/79	58	4:27	-61	FL360	1:00	31.9N	129.2W	FL362	-52.4	5.8	FL360	-50.9	5.8	4:13				
LAX-HNL	1/23/78	50	4:15	-59	FL360	0:09	33.5N	122.6W	FL361	-55.3	4.4	FL359	-45.5	1.2	3:45				
LAX-HNL	1/24/77	53	4:31	-58	FL361	0:10	33.9N	121.8W	FL359	-54.4	3.3	FL360	-53.4	6.1	3:39	FL365	-52.2	4.6	1:30
LAX-HNL	1/24/79	56	4:34	-55	FL330	0:05	33.5N	122.0W	FL358	-42.5	2.7	FL360	-58.0	.9	2:24	FL364	-54.3	1.9	1:35
LAX-HNL	1/27/76	50	4:19	-57	FL350	0:09	33.7N	122.1W	FL348	-48.7	4.1	FL360	-55.5	1.4	2:36				
												FL360	-42.3	1.9	4:19				
												FL350	-49.1	3.5	4:04				





APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-HNL	6/24/78	58	4:44	-52	FL361	1:09	31.5N	130.7W	FL358	-49.1	2.8	FL360	-49.8	.8	4:24				
LAX-HNL	6/28/77	48	4:04	-51	FL360	0:39	32.3N	127.8W	FL359	-49.1	2.2	FL360	-49.5	1.3	3:49				
LAX-HNL	6/28/78	56	4:35	-52	FL360	0:30	32.8N	125.8W	FL357	-49.5	3.5	FL360	-50.3	.9	4:15				
LAX-HNL	6/29/77	48	4:11	-53	FL360	2:06	28.3N	140.4W	FL349	-46.0	5.4	FL321	-38.5	1.3	1:04	FL360	-49.2	2.0	2:51
LAX-HNL	6/30/78	57	4:39	-52	FL360	1:39	30.5N	134.2W	FL358	-49.3	2.8	FL360	-49.9	1.0	4:19				
LAX-HNL	7/ 1/77	53	4:24	-52	FL361	2:09	28.4N	140.3W	FL346	-44.2	7.1	FL321	-34.9	1.1	1:14	FL360	-49.3	1.3	2:49
LAX-HNL	7/ 1/77	54	4:24	-50	FL360	2:24	27.9N	141.4W	FL356	-46.9	4.8	FL360	-48.0	2.4	4:05				
LAX-HNL	7/ 2/78	57	4:40	-48	FL351	0:20	32.4N	123.5W	FL348	-45.9	2.8	FL350	-46.5	.9	4:20				
LAX-HNL	7/ 3/77	48	3:59	-43	FL321	0:30	32.7N	126.2W	FL320	-40.7	2.0	FL320	-40.9	1.5	3:54				
LAX-HNL	7/ 3/79	54	4:26	-52	FL350	0:09	33.4N	123.2W	FL349	-48.2	2.3	FL350	-48.4	1.7	4:16				
LAX-HNL	7/ 3/79	54	4:24	-52	FL350	0:39	32.4N	127.5W	FL349	-48.3	2.5	FL350	-48.7	1.5	4:09				
LAX-HNL	7/ 4/77	50	4:19	-61	FL400	1:14	31.2N	131.8W	FL393	-57.5	5.5	FL399	-59.1	1.0	3:49				
LAX-HNL	7/ 4/77	52	4:15	-52	FL350	1:00	31.0N	129.3W	FL347	-48.9	3.5	FL349	-49.5	1.7	4:00				
LAX-HNL	7/ 4/78	56	4:34	-48	FL351	0:15	32.5N	123.1W	FL348	-45.2	2.9	FL350	-45.8	1.1	4:19				
LAX-HNL	7/ 5/77	50	4:18	-55	FL360	0:14	33.4N	123.0W	FL357	-52.4	3.5	FL360	-53.2	.8	4:04				
LAX-HNL	7/ 6/78	55	4:28	-50	FL360	1:39	30.0N	135.6W	FL349	-46.7	5.2	FL359	-49.1	.8	3:30				
LAX-HNL	7/ 8/79	56	4:34	-53	FL370	1:20	31.2N	131.8W	FL362	-48.3	4.0	FL370	-49.6	1.4	3:09				
LAX-HNL	7/10/78	54	4:24	-49	FL360	2:04	29.0N	138.5W	FL356	-46.4	3.7	FL360	-47.3	1.4	4:05				
LAX-HNL	7/12/77	48	4:09	-52	FL360	3:09	24.8N	148.9W	FL358	-49.1	3.1	FL359	-49.7	1.3	4:00				
LAX-HNL	7/12/79	51	4:09	-46	FL351	0:20	33.6N	123.9W	FL348	-43.6	2.4	FL350	-44.1	1.0	3:50				
LAX-HNL	7/18/77	51	4:15	-52	FL360	3:15	24.5N	149.6W	FL358	-48.4	3.1	FL360	-48.9	2.2	4:00				
LAX-HNL	7/19/77	52	4:18	-51	FL360	0:13	33.3N	123.6W	FL358	-47.5	2.5	FL360	-48.0	1.4	4:03				
LAX-HNL	7/19/77	53	4:19	-52	FL360	0:10	33.4N	122.8W	FL359	-48.6	2.1	FL360	-48.9	1.6	4:04				
LAX-HNL	7/19/78	51	4:09	-48	FL361	3:29	23.6N	151.3W	FL357	-45.8	3.2	FL360	-46.6	.8	3:45				
LAX-HNL	7/19/78	51	4:09	-48	FL361	4:04	21.8N	155.5W	FL357	-45.1	3.0	FL360	-45.9	.8	3:49				
LAX-HNL	7/20/77	53	4:24	-54	FL360	0:09	33.3N	123.1W	FL359	-49.9	1.8	FL360	-50.1	1.2	4:15				
LAX-HNL	7/21/78	51	4:09	-48	FL361	0:35	32.5N	126.9W	FL357	-45.8	3.0	FL360	-46.5	.6	3:49				
LAX-HNL	7/22/77	45	4:04	-44	FL311	1:35	31.4N	136.8W	FL307	-40.2	2.2	FL300	-40.5	.9	1:30	FL310	-40.0	2.6	2:29
LAX-HNL	7/22/77	49	4:04	-51	FL360	0:49	31.7N	129.9W	FL359	-48.9	1.9	FL360	-49.1	1.6	3:54				
LAX-HNL	7/23/77	55	4:43	-58	FL389	2:22	27.6N	139.8W	FL371	-52.2	5.2	FL349	-48.2	1.0	1:37	FL389	-55.8	1.2	2:34
LAX-HNL	7/24/77	50	4:24	-55	FL360	2:09	28.9N	138.9W	FL358	-52.0	3.3	FL360	-52.6	1.7	4:09				
LAX-HNL	7/25/78	53	4:20	-39	FL320	1:15	31.2N	131.9W	FL319	-37.3	1.7	FL320	-37.6	1.0	4:09				
LAX-HNL	7/25/78	53	4:19	-49	FL361	1:44	29.9N	136.1W	FL356	-46.2	4.8	FL360	-47.5	1.0	3:54				
LAX-HNL	7/26/77	52	4:24	-54	FL360	2:34	27.3N	143.1W	FL357	-50.2	3.8	FL359	-50.9	2.4	4:03				
LAX-HNL	7/26/78	53	4:19	-50	FL361	2:24	27.7N	142.0W	FL359	-47.2	3.0	FL360	-47.7	1.0	4:09				
LAX-HNL	7/29/78	53	4:21	-47	FL351	1:55	28.1N	138.3W	FL348	-44.3	3.5	FL350	-45.2	.9	3:59				
LAX-HNL	8/ 1/77	51	4:18	-53	FL360	1:59	29.0N	138.7W	FL356	-49.1	4.8	FL360	-50.1	1.6	3:58				
LAX-HNL	8/ 2/78	52	4:15	-51	FL361	2:20	27.5N	142.5W	FL357	-48.0	4.0	FL360	-49.1	1.0	3:49				
LAX-HNL	8/ 3/77	51	4:24	-52	FL360	1:09	31.4N	131.2W	FL357	-49.0	4.3	FL360	-50.0	1.5	4:04				
LAX-HNL	8/ 3/77	53	4:29	-52	FL365	1:54	29.5N	137.2W	FL358	-49.5	4.0	FL360	-50.3	1.3	4:09				
LAX-HNL	8/ 4/78	52	4:20	-52	FL361	2:11	28.3N	140.5W	FL339	-45.5	6.6	FL320	-40.4	1.7	1:54	FL360	-51.7	.4	2:00
LAX-HNL	8/ 5/78	53	4:19	-53	FL361	2:09	28.2N	140.7W	FL356	-49.1	5.1	FL360	-50.4	1.8	4:00				
LAX-HNL	8/ 6/78	51	4:09	-53	FL361	1:54	28.8N	139.2W	FL357	-50.1	4.5	FL360	-51.2	1.4	3:49				
LAX-HNL	8/ 7/77	52	4:25	-51	FL360	2:10	28.8N	139.0W	FL356	-48.1	4.8	FL360	-49.3	1.1	4:05				
LAX-HNL	8/ 9/78	51	4:09	-53	FL361	1:09	30.9N	132.7W	FL356	-49.4	4.7	FL360	-50.7	1.5	3:45				
LAX-HNL	8/13/77	51	4:24	-48	FL360	2:20	28.2N	140.7W	FL356	-45.4	4.0	FL359	-46.5	1.1	4:00				
LAX-HNL	8/20/76	50	4:04	-49	FL350	0:35	31.8N	126.1W	FL349	-44.3	2.1	FL349	-44.5	1.8	3:54				
LAX-HNL	8/22/76	52	4:19	-47	FL359	1:39	30.0N	135.7W	FL357	-43.6	2.9	FL358	-44.2	1.9	4:04				
LAX-HNL	8/24/76	53	4:24	-46	FL359	2:24	27.9N	141.6W	FL358	-42.7	2.9	FL359	-43.0	2.0	4:14				
LAX-HNL	8/26/76	51	4:19	-50	FL359	3:14	25.1N	148.1W	FL356	-46.0	4.4	FL359	-46.9	1.6	4:04				
LAX-HNL	8/26/77	51	4:15	-48	FL360	0:15	33.2N	123.7W	FL357	-46.6	3.1	FL359	-47.3	.6	4:00				
LAX-HNL	8/28/76	52	4:14	-47	FL349	3:34	25.1N	151.2W	FL343	-42.6	4.0	FL348	-44.3	1.2	3:29				
LAX-HNL	8/30/76	51	4:11	-47	FL359	2:49	26.4N	145.3W	FL356	-43.6	4.0	FL359	-44.4	1.6	3:56				









APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-JFK	11/ 9/78	45	3:49	-59	FL370	3:24	41.3N	80.0W	FL351	-51.8	6.1	FL329	-45.6	.5	1:34	FL370	-57.0	1.2	1:54
LAX-JFK	11/ 9/78	46	3:45	-65	FL409	3:00	42.4N	84.2W	FL381	-57.4	6.4	FL369	-54.3	1.1	1:30				
LAX-JFK	11/10/78	15	3:24	-64	FL410	2:05	41.9N	91.0W	FL399	-60.3	4.7	FL409	-62.9	.9	1:48				
LAX-JFK	11/17/77	47	3:53	-58	FL370	1:39	38.9N	99.2W	FL365	-52.2	5.4	FL370	-53.2	4.0	3:29				
LAX-JFK	11/20/77	43	3:32	-61	FL370	2:57	42.4N	82.9W	FL366	-55.2	5.2	FL370	-55.8	4.1	3:12				
LAX-JFK	12/ 5/77	34	3:15	-61	FL410	0:05	36.1N	112.1W	FL408	-51.1	4.0	FL410	-50.9	3.9	3:11				
LAX-JFK	12/13/76	46	3:51	-62	FL370	2:21	40.7N	93.4W	FL377	-57.4	4.2	FL370	-59.3	1.2	2:06	FL410	-57.0	1.2	1:04
LAX-JFK	12/16/77	44	3:37	-59	FL370	3:12	41.2N	81.0W	FL367	-49.4	6.7	FL370	-49.7	6.2	3:17				
LAX-JFK	12/17/76	47	3:54	-62	FL371	3:00	42.9N	87.1W	FL365	-56.9	5.6	FL370	-58.1	4.3	3:30				
LAX-JFK	12/30/77	45	3:45	-58	FL370	0:45	34.9N	108.6W	FL382	-55.0	3.4	FL369	-55.1	2.1	1:45	FL409	-56.6	1.4	1:25
LAX-LHR	4/ 2/79	108	8:54	-65	FL371	6:34	62.2N	32.4W	FL346	-53.9	4.5	FL330	-54.0	3.1	5:49	FL389	-52.1	4.7	1:55
LAX-LHR	5/21/79	113	9:16	-59	FL370	5:34	60.2N	54.6W	FL352	-47.0	4.5	FL330	-47.3	2.0	3:44	FL370	-47.4	5.5	4:59
LAX-LHR	6/18/78	101	8:49	-60	FL410	8:34	54.8N	3.4W	FL383	-50.7	5.8	FL370	-53.0	4.5	5:24	FL410	-45.5	2.4	2:30
LAX-LHR	6/25/78	100	8:39	-55	FL390	2:54	53.3N	89.5W	FL390	-49.0	3.0	FL370	-49.4	3.0	1:25	FL390	-48.9	2.5	4:25
LAX-LHR	6/30/78	106	8:50	-56	FL373	8:24	55.6N	4.2W	FL379	-48.1	4.6	FL410	-49.5	1.9	2:19				
LAX-LHR	7/ 3/78	106	8:44	-58	FL371	3:54	56.1N	75.5W	FL387	-50.2	5.1	FL370	-52.1	1.2	3:05	FL391	-45.3	2.6	4:45
LAX-LHR	7/ 8/78	104	8:34	-61	FL391	5:19	60.0N	50.3W	FL376	-50.0	6.3	FL370	-52.8	2.6	4:15	FL410	-49.6	5.2	3:04
LAX-LHR	7/10/78	110	9:04	-58	FL371	2:09	48.1N	98.9W	FL392	-49.6	3.2	FL371	-51.9	5.4	3:05	FL391	-50.4	6.4	4:15
LAX-LHR	7/14/78	108	8:54	-56	FL371	5:50	60.1N	47.4W	FL382	-49.8	4.6	FL371	-52.6	3.0	2:05	FL390	-49.6	2.3	2:39
LAX-LHR	7/20/78	104	8:30	-58	FL410	7:54	56.4N	7.2W	FL393	-48.2	3.9	FL410	-48.3	1.8	3:45	FL411	-52.7	2.8	2:39
LAX-LHR	7/26/78	110	9:05	-59	FL371	4:25	56.1N	72.4W	FL363	-47.4	4.8	FL370	-48.7	4.5	5:45	FL390	-46.6	3.5	3:09
LAX-LHR	8/ 1/78	108	8:52	-60	FL370	3:05	52.9N	88.2W	FL387	-50.4	4.6	FL410	-49.2	.4	1:24				
LAX-LHR	8/ 7/78	111	9:09	-59	FL371	4:04	55.5N	76.4W	FL384	-50.7	5.1	FL370	-49.8	3.7	3:29	FL370	-47.4	4.8	5:39
LAX-LHR	8/12/78	106	8:44	-62	FL391	4:30	56.6N	67.9W	FL389	-51.6	5.3	FL370	-52.4	3.8	4:37	FL409	-48.6	4.1	3:39
LAX-LHR	9/ 2/78	100	8:45	-61	FL388	8:24	54.7N	6.7W	FL378	-49.9	4.9	FL370	-54.3	1.8	4:19	FL390	-44.3	2.9	1:20
LAX-LHR	9/ 4/78	104	8:38	-62	FL371	3:20	51.2N	82.7W	FL370	-49.8	5.7	FL409	-50.0	2.6	2:49				
LAX-LHR	9/ 9/78	103	8:42	-64	FL410	8:03	56.2N	11.3W	FL376	-52.3	5.4	FL371	-53.8	2.2	3:30	FL390	-56.8	4.5	1:04
LAX-LHR	10/ 5/78	107	9:15	-64	FL391	8:50	52.7N	8.1W	FL379	-56.4	4.7	FL410	-48.6	4.6	3:45	FL370	-49.5	4.1	4:30
LAX-LHR	10/15/78	106	8:50	-64	FL391	5:56	61.8N	51.0W	FL374	-54.3	5.8	FL371	-50.0	5.5	8:28	FL390	-50.0	4.9	3:39
LAX-LHR	10/20/78	95	8:24	-65	FL411	8:19	53.5N	2.4W	FL389	-53.9	6.1	FL330	-46.7	.5	1:09	FL370	-52.9	2.6	3:04
LAX-LHR	10/26/78	105	8:55	-67	FL410	8:30	56.2N	5.3W	FL386	-52.4	5.7	FL390	-50.7	1.9	2:00	FL410	-58.3	5.8	1:52
LAX-LHR	11/15/78	102	8:35	-54	FL370	6:05	55.9N	42.0W	FL350	-47.8	5.7	FL370	-54.5	3.7	2:34	FL370	-57.4	4.6	2:04
LAX-LHR	11/18/78	102	8:37	-60	FL361	8:20	54.4N	3.2W	FL333	-53.0	3.9	FL390	-58.4	3.5	3:49	FL390	-57.0	5.7	3:03
LAX-LHR	11/20/78	100	8:24	-63	FL370	8:15	51.9N	6.0W	FL345	-55.0	3.7	FL370	-54.1	3.5	4:37	FL410	-52.2	6.7	4:04
LAX-LHR	12/ 9/78	111	9:23	-59	FL330	0:45	39.0N	110.4W	FL345	-51.5	4.3	FL370	-55.9	4.6	3:50	FL410	-56.8	5.4	3:40
LAX-LHR	12/14/78	109	9:07	-64	FL363	5:30	49.6N	51.6W	FL347	-52.9	5.0	FL329	-46.0	5.3	3:35	FL370	-50.2	3.5	4:24
LAX-NRT	1/ 7/79	119	9:43	-62	FL353	1:04	39.3N	127.6W	FL383	-54.1	3.2	FL329	-53.8	2.9	6:45	FL370	-53.1	2.7	1:04
LAX-NRT	1/14/79	121	10:26	-66	FL370	2:39	49.1N	140.4W	FL380	-52.4	6.5	FL329	-53.7	1.6	4:50	FL370	-57.6	4.4	3:09
LAX-NRT	1/21/79	122	10:14	-64	FL370	1:45	43.7N	133.7W	FL385	-49.9	8.7	FL329	-51.1	5.2	3:53	FL369	-52.8	2.3	4:19
LAX-NRT	1/27/79	117	10:07	-71	FL390	3:05	45.9N	145.4W	FL395	-52.3	9.0	FL330	-53.6	2.2	2:48	FL349	-50.3	6.0	1:30
												FL369	-55.3	3.2	3:27				
												FL350	-59.6	1.2	1:14	FL370	-52.7	1.5	2:45
												FL390	-51.8	1.3	1:55	FL411	-54.8	2.5	2:09
												FL350	-54.8	4.2	2:19	FL369	-59.5	7.5	2:12
												FL390	-46.8	2.9	2:54	FL409	-51.1	1.9	2:20
												FL349	-58.9	1.1	1:21	FL370	-61.0	4.4	1:54
												FL390	-40.6	3.5	2:58	FL409	-47.3	2.5	3:25
												FL370	-63.6	3.6	1:45	FL390	-64.6	5.8	1:18
												FL409	-45.9	3.2	6:00				

APPENDIX B  
FLIGHT SUMMARY

	-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
	ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
102	LAX-NRT	1/31/79	118	10:09	-71	FL410	8:45	40.0N	152.1E	FL388	-58.6	8.8	FL350	-54.6	5.3	2:15	FL390	-57.9	9.1	3:15
	LAX-NRT	2/ 4/79	123	10:24	-64	FL370	1:25	39.8N	131.7W	FL386	-53.1	6.2	FL410	-61.8	8.7	4:15	FL350	-60.0	.8	1:09
	LAX-NRT	2/11/79	122	10:34	-69	FL370	4:45	54.0N	160.9W	FL379	-53.5	6.0	FL390	-46.8	3.3	3:00	FL370	-60.3	4.0	2:19
	LAX-NRT	2/19/79	124	10:20	-64	FL370	0:55	38.8N	124.4W	FL387	-50.4	7.1	FL349	-53.6	2.7	2:24	FL410	-51.8	2.1	3:14
	LAX-NRT	2/20/79	119	9:59	-65	FL370	8:45	43.6N	149.4E	FL367	-51.9	5.6	FL389	-55.7	4.2	3:05	FL369	-56.5	8.5	2:05
	LAX-NRT	2/26/79	119	10:09	-68	FL384	1:20	42.3N	125.7W	FL397	-48.8	8.1	FL369	-56.8	6.0	3:50	FL410	-48.6	3.1	2:30
	LAX-NRT	3/ 1/79	117	10:11	-63	FL370	2:14	44.5N	134.5W	FL382	-48.7	6.7	FL410	-43.1	2.5	1:34	FL389	-46.2	3.3	3:24
	LAX-NRT	4/ 4/79	127	10:13	-66	FL410	9:58	38.4N	143.0E	FL390	-54.8	6.8	FL369	-51.6	5.7	8:59	FL410	-44.0	2.8	1:54
	LAX-NRT	4/17/79	122	10:24	-62	FL410	10:19	36.7N	142.4E	FL383	-50.3	4.1	FL389	-47.7	8.1	4:45	FL369	-54.7	5.9	1:56
	LAX-NRT	4/25/79	122	10:17	-64	FL370	2:54	48.9N	145.9W	FL382	-54.3	6.3	FL430	-47.2	1.2	1:50	FL410	-45.6	.5	2:15
	LAX-NRT	5/ 4/79	113	9:35	-56	FL410	8:50	41.6N	146.7E	FL378	-50.3	3.8	FL349	-52.0	2.1	1:54	FL369	-57.4	6.6	2:05
	LAX-NRT	6/ 7/79	121	10:20	-66	FL390	4:50	43.7N	165.9W	FL382	-58.7	6.3	FL389	-58.5	.8	1:25	FL390	-47.0	2.6	2:05
	LAX-NRT	6/10/78	113	10:00	-63	FL411	8:45	43.3N	149.0E	FL377	-50.5	6.6	FL409	-54.5	7.3	5:12	FL370	-60.3	2.9	2:24
	LAX-NRT	6/13/78	124	10:22	-66	FL409	8:15	47.6N	155.5E	FL383	-52.6	8.0	FL350	-50.0	3.1	3:00	FL410	-53.7	6.4	3:15
	LAX-NRT	6/15/78	114	9:44	-64	FL391	4:39	40.4N	166.9W	FL374	-55.9	3.8	FL410	-51.1	3.6	4:04	FL369	-47.1	1.7	2:00
	LAX-NRT	6/15/79	124	10:20	-62	FL410	8:45	36.1N	155.7E	FL378	-56.7	3.9	FL350	-56.0	1.0	1:45	FL410	-53.3	1.6	1:55
	LAX-NRT	6/20/78	117	9:38	-59	FL390	4:49	47.9N	168.5W	FL370	-52.7	3.9	FL389	-49.8	3.3	2:57	FL350	-57.2	.9	2:34
	LAX-NRT	6/22/78	109	9:45	-62	FL391	4:50	42.0N	169.6W	FL377	-55.9	5.0	FL390	-49.7	1.3	1:20	FL410	-62.0	1.4	2:00
	LAX-NRT	6/28/79	309	10:08	-63	FL390	4:49	53.5N	167.1W	FL394	-53.8	5.9	FL350	-62.9	2.0	3:39	FL370	-50.9	2.7	2:09
	LAX-NRT	7/ 5/78	116	9:39	-55	FL371	5:00	49.1N	169.3W	FL365	-49.9	4.4	FL391	-45.4	4.7	2:25	FL410	-59.9	3.6	1:54
	LAX-NRT	7/17/78	124	9:54	-65	FL432	7:53	41.0N	160.0E	FL397	-54.5	8.0	FL350	-51.4	4.9	3:09	FL370	-54.3	6.6	1:19
	LAX-NRT	7/23/78	117	9:39	-62	FL391	4:30	44.1N	166.5W	FL392	-57.1	4.8	FL409	-53.6	9.2	5:13	FL391	-58.4	2.4	5:30
	LAX-NRT	7/29/78	112	9:15	-58	FL391	4:30	51.0N	170.0W	FL385	-49.1	6.3	FL350	-52.9	1.5	3:49	FL369	-57.1	1.1	1:24
	LAX-NRT	8/ 4/78	116	9:35	-56	FL391	4:54	39.0N	169.1W	FL370	-51.6	3.5	FL349	-52.6	2.1	2:15	FL390	-58.5	.8	3:19
	LAX-NRT	8/ 9/78	116	9:34	-57	FL390	6:45	35.1N	170.8E	FL375	-52.9	3.5	FL370	-55.3	1.1	1:15	FL391	-53.9	2.9	4:44
	LAX-NRT	8/22/78	117	9:59	-61	FL391	4:03	43.0N	159.6W	FL374	-52.4	4.9	FL410	-61.3	.7	1:35	FL370	-57.6	.5	1:35
	LAX-NRT	8/25/78	111	9:54	-59	FL390	4:45	49.6N	165.6W	FL377	-52.3	4.9	FL350	-52.3	2.3	4:29	FL396	-56.2	.8	2:20
	LAX-NRT	8/30/78	120	10:07	-59	FL391	5:25	38.1N	172.3W	FL372	-52.7	3.8	FL351	-53.1	.7	2:30	FL389	-52.6	7.9	2:11
													FL393	-59.2	1.4	1:35	FL350	-51.1	3.3	1:44
													FL371	-55.7	4.8	3:43	FL391	-52.4	1.6	2:50
													FL410	-54.9	2.5	3:00	FL391	-51.8	7.3	4:04
													FL331	-47.9	1.4	1:09	FL431	-61.8	3.0	2:14
													FL370	-49.4	4.6	2:45	FL391	-59.1	2.2	3:50
													FL351	-46.9	1.5	1:15	FL390	-48.4	7.7	3:30
													FL411	-59.6	1.9	1:39	FL411	-55.0	2.3	1:10
													FL370	-52.4	2.4	2:00	FL390	-54.0	.6	3:24
													FL410	-58.6	4.0	3:19	FL390	-55.5	1.0	5:04
													FL351	-46.0	1.5	1:25	FL390	-53.0	5.5	6:00
													FL391	-52.0	.7	1:45	FL370	-48.5	1.3	2:34
													FL350	-50.3	2.2	4:34	FL370	-53.5	.6	2:21
													FL390	-51.9	.9	1:15				
													FL350	-49.0	1.2	3:04				
													FL350	-52.0	1.4	3:35				
													FL350	-51.7	1.7	1:24				
													FL390	-55.1	3.4	5:19				
													FL350	-49.5	1.2	2:39				
													FL390	-55.3	2.7	4:07				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-NRT	9/ 6/78	115	9:47		-60	FL372	2:52	52.6N	143.5W	FL380	-47.5	5.4	FL351	-46.6	5.3	2:00	FL371	-50.8	5.8	2:09
LAX-NRT	9/19/78	115	10:05		-62	FL411	6:50	39.7N	174.0E	FL386	-56.9	3.8	FL390	-45.5	1.3	2:49	FL410	-49.2	4.4	2:09
LAX-NRT	9/21/78	121	10:15		-61	FL391	4:39	37.1N	164.7W	FL378	-54.3	4.5	FL350	-53.4	.6	1:09	FL370	-56.1	.7	1:50
LAX-NRT	9/25/78	122	10:00		-65	FL391	3:50	53.7N	155.6W	FL385	-54.9	4.7	FL390	-59.5	.8	3:06	FL411	-57.6	3.2	3:09
LAX-NRT	10/ 2/78	126	10:24		-58	FL371	2:54	48.5N	144.6W	FL383	-53.2	4.1	FL350	-51.4	.8	4:20	FL390	-58.8	1.0	2:15
LAX-NRT	10/ 8/78	118	9:54		-64	FL391	8:00	46.9N	154.4E	FL377	-50.7	5.4	FL410	-56.4	3.1	3:09	FL390	-54.0	5.0	3:30
LAX-NRT	10/24/78	124	10:26		-61	FL411	9:56	39.5N	144.1E	FL385	-51.5	5.1	FL350	-55.2	3.0	1:56	FL370	-56.8	.9	2:19
LAX-NRT	10/30/78	124	10:26		-64	FL371	1:49	39.7N	136.2W	FL377	-57.5	3.3	FL410	-56.9	1.7	3:24	FL411	-54.0	3.0	3:24
LAX-NRT	11/29/78	130	11:09		-55	FL350	0:09	35.8N	120.7W	FL381	-49.3	3.8	FL390	-52.6	.9	2:00	FL370	-59.2	2.6	4:01
LAX-NRT	12/ 5/78	124	10:24		-66	FL410	5:39	51.9N	176.3W	FL387	-51.5	4.4	FL350	-50.0	3.6	2:05	FL390	-50.8	1.9	3:04
LAX-NRT	12/12/78	124	10:41		-65	FL370	2:16	49.1N	134.0W	FL384	-55.2	5.2	FL410	-54.2	.8	1:43	FL371	-53.3	2.8	1:24
LAX-NRT	12/17/78	127	10:49		-63	FL371	3:45	50.3N	151.3W	FL374	-54.0	3.8	FL390	-52.1	5.5	5:19	FL410	-50.6	4.9	4:49
LAX-NRT	12/26/78	117	10:00		-62	FL370	1:55	42.6N	136.0W	FL381	-54.4	4.6	FL350	-51.2	.7	1:44	FL372	-59.3	5.2	1:45
LAX-NRT	12/30/78	116	10:14		-71	FL390	2:40	47.6N	137.4W	FL392	-52.4	8.5	FL390	-48.4	1.3	3:39	FL410	-56.6	3.6	4:00
LAX-OMH	12/ 8/78	24	1:59		-63	FL370	1:54	40.6N	99.0W	FL364	-59.8	5.0	FL390	-52.9	2.7	2:19	FL369	-55.4	3.9	2:05
LAX-ORD	1/ 3/78	30	2:34		-64	FL370	1:00	38.0N	107.1W	FL366	-58.8	4.1	FL390	-52.0	3.8	2:09	FL409	-52.8	.7	1:05
LAX-ORD	1/10/78	30	2:35		-61	FL370	2:20	40.8N	93.2W	FL363	-51.5	4.7	FL410	-56.7	1.6	4:54	FL390	-52.4	4.3	5:54
LAX-ORD	1/17/79	29	2:19		-62	FL370	1:25	39.3N	102.5W	FL363	-58.1	3.6	FL350	-52.0	3.8	2:09	FL409	-45.3	3.1	4:09
LAX-ORD	1/21/78	32	2:37		-57	FL364	0:07	35.1N	116.1W	FL366	-50.5	2.6	FL390	-52.9	2.7	2:19				
LAX-ORD	1/29/78	30	2:30		-57	FL370	0:50	37.8N	108.8W	FL364	-52.2	3.3	FL390	-52.3	3.0	1:09				
LAX-ORD	2/ 1/79	27	2:09		-56	FL371	0:30	35.5N	109.8W	FL368	-52.7	3.3	FL349	-57.5	1.8	1:55				
LAX-ORD	2/ 2/78	30	2:34		-65	FL370	1:24	38.9N	104.1W	FL367	-60.3	3.2	FL390	-49.2	2.4	2:20				
LAX-ORD	2/ 2/79	108	2:14		-55	FL371	1:02	36.9N	103.9W	FL369	-51.0	1.7	FL390	-55.2	4.0	3:09				
LAX-ORD	2/ 9/78	28	2:24		-61	FL352	2:20	41.0N	91.2W	FL361	-52.5	4.8	FL390	-53.3	2.7	3:45				
LAX-ORD	2/11/76	27	2:25		-58	FL390	1:05	36.3N	105.9W	FL383	-53.6	4.2	FL390	-58.0	2.0	3:24				
LAX-ORD	2/13/76	30	2:30		-51	FL371	1:07	37.8N	106.2W	FL362	-46.6	3.1	FL390	-57.2	8.5	4:09				
LAX-ORD	2/25/79	31	2:30		-64	FL371	1:39	40.0N	98.9W	FL364	-60.0	4.4	FL370	-61.2	.9	1:45				
LAX-ORD	2/27/76	29	2:30		-62	FL370	0:09	35.4N	115.6W	FL347	-56.8	5.2	FL370	-59.0	2.2	2:00				
LAX-ORD	2/27/78	29	2:25		-59	FL371	2:05	40.5N	93.7W	FL359	-53.0	4.1	FL370	-50.6	2.1	2:21				
LAX-ORD	3/ 1/79	46	2:31		-67	FL370	2:10	40.7N	94.4W	FL366	-62.7	4.4	FL370	-52.9	1.9	2:10				
LAX-ORD	3/ 6/76	30	2:30		-59	FL370	1:09	37.7N	105.7W	FL362	-53.4	4.2	FL370	-53.1	3.1	1:59				
LAX-ORD	3/ 7/79	131	2:44		-64	FL371	1:05	38.3N	107.0W	FL369	-57.5	6.6	FL370	-60.9	1.4	2:20				
LAX-ORD	3/10/79	129	2:38		-55	FL370	0:29	34.4N	112.4W	FL369	-49.9	3.3	FL370	-51.2	1.4	2:00				
LAX-ORD	3/16/78	33	2:42		-61	FL371	0:45	36.7N	110.0W	FL360	-51.4	6.1	FL370	-53.5	3.3	1:54				
LAX-ORD	3/25/77	29	2:30		-61	FL370	1:30	38.3N	101.1W	FL361	-54.4	5.6	FL370	-47.5	2.1	2:10				
LAX-ORD	3/26/79	28	2:25		-62	FL370	0:21	35.9N	112.5W	FL371	-57.6	4.3	FL370	-61.5	1.5	2:04				
LAX-ORD	3/29/79	31	2:39		-62	FL370	2:00	40.1N	96.6W	FL365	-55.0	5.8	FL330	-53.5	1.1	1:05				
LAX-ORD	4/10/75	29	2:17		-55	FL370	1:09	37.1N	103.2W	FL363	-50.7	4.1	FL370	-54.1	2.1	1:50				
LAX-ORD	4/18/78	30	2:25		-61	FL371	0:35	36.5N	110.8W	FL365	-55.0	5.8	FL370	-54.1	2.1	1:50				
LAX-ORD	4/24/78	30	2:30		-61	FL371	1:15	38.2N	104.6W	FL362	-50.0	7.3	FL370	-63.8	3.2	2:05				
LAX-ORD	5/ 3/76	32	2:34		-62	FL370	0:10	35.0N	115.6W	FL365	-54.9	6.6	FL369	-54.6	3.2	2:09				
										FL362	-58.4	5.6	FL370	-57.9	6.3	2:25				
													FL370	-50.0	3.1	2:14				
													FL370	-52.2	6.0	2:19				
													FL370	-55.8	4.0	2:10				
													FL390	-58.4	1.3	1:09				
													FL370	-56.1	5.4	2:18				
													FL370	-51.7	1.9	1:57				
													FL370	-50.8	7.0	2:04				
													FL370	-56.3	4.7	2:15				
													FL370	-60.1	3.0	2:14				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----				-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-ORD	5/ 4/76	35	2:45	-66	FL410	1:10	38.3N	107.0W	FL388	-62.0	5.1	FL409	-64.3	1.9	1:26				
LAX-ORD	5/ 5/76	31	2:30	-65	FL391	1:45	39.8N	99.4W	FL375	-60.5	4.6								
LAX-ORD	5/15/75	29	2:25	-58	FL370	1:04	38.3N	105.3W	FL364	-54.4	4.3	FL369	-55.8	1.2	2:00				
LAX-ORD	5/18/78	33	2:37	-56	FL371	0:10	35.4N	116.0W	FL365	-51.2	3.9	FL370	-52.2	2.0	2:22				
LAX-ORD	6/ 1/78	28	2:28	-64	FL400	1:58	40.6N	95.9W	FL377	-57.5	4.1	FL370	-56.5	1.6	1:07				
LAX-ORD	6/ 1/79	30	2:25	-57	FL370	0:55	38.2N	107.5W	FL364	-53.5	3.4	FL370	-54.4	1.6	2:05				
LAX-ORD	6/ 7/75	31	2:34	-55	FL370	1:49	39.9N	98.3W	FL361	-50.6	5.5	FL369	-52.5	1.2	2:09				
LAX-ORD	6/ 8/78	32	2:34	-59	FL371	1:00	38.0N	107.2W	FL368	-54.5	4.8	FL370	-56.3	1.4	1:30				
LAX-ORD	6/11/77	29	2:35	-55	FL370	0:15	35.7N	115.0W	FL360	-49.1	6.6	FL369	-51.3	2.4	2:05				
LAX-ORD	6/15/75	29	2:24	-57	FL371	1:04	37.9N	104.6W	FL363	-49.5	6.3	FL371	-51.5	3.3	1:59				
LAX-ORD	6/18/78	30	2:24	-54	FL371	1:00	38.7N	105.9W	FL363	-50.4	5.3	FL370	-52.3	1.1	2:00				
LAX-ORD	6/21/79	29	2:19	-54	FL371	0:54	38.5N	107.1W	FL362	-51.2	4.7	FL370	-53.0	1.8	1:54				
LAX-ORD	7/ 2/77	29	2:34	-53	FL370	2:19	40.9N	92.5W	FL358	-46.6	6.6	FL369	-49.3	1.6	2:04				
LAX-ORD	7/ 7/79	31	2:20	-53	FL370	1:30	40.4N	100.0W	FL360	-49.2	5.4	FL370	-51.4	1.8	1:46				
LAX-ORD	7/ 8/77	27	2:20	-51	FL370	1:20	39.1N	101.1W	FL364	-47.7	4.2	FL369	-49.4	1.1	1:54				
LAX-ORD	7/20/77	34	2:49	-59	FL411	1:19	39.3N	104.0W	FL387	-53.2	5.7	FL410	-58.2	1.6	1:24				
LAX-ORD	7/25/77	31	2:30	-54	FL390	1:09	38.5N	104.7W	FL373	-49.6	5.0	FL389	-53.5	1.7	1:10				
LAX-ORD	7/30/77	27	2:19	-53	FL370	2:15	40.7N	92.5W	FL364	-49.0	4.6	FL369	-50.5	1.2	2:04				
LAX-ORD	8/ 1/77	31	2:30	-56	FL369	2:19	40.9N	91.9W	FL363	-50.1	4.7	FL369	-51.7	2.4	2:04				
LAX-ORD	8/ 4/78	31	2:30	-54	FL391	0:55	37.8N	107.4W	FL376	-49.7	5.7	FL390	-52.7	1.0	1:30				
LAX-ORD	8/10/77	29	2:24	-50	FL370	0:54	38.2N	107.2W	FL363	-46.9	4.6	FL369	-48.6	1.8	2:04				
LAX-ORD	8/13/75	31	2:22	-57	FL391	1:35	41.8N	100.4W	FL370	-50.1	5.3								
LAX-ORD	8/17/75	28	2:15	-59	FL391	1:55	40.4N	94.6W	FL371	-52.0	5.6	FL371	-51.7	1.9	1:25				
LAX-ORD	8/18/77	30	2:35	-50	FL369	2:15	40.7N	93.7W	FL363	-46.7	4.7	FL369	-48.1	1.0	2:10				
LAX-ORD	9/12/77	31	2:34	-55	FL368	0:09	35.6N	115.6W	FL363	-52.6	5.5	FL369	-54.3	1.7	2:15				
LAX-ORD	9/15/77	24	2:28	-56	FL369	1:23	39.3N	101.8W	FL358	-51.5	5.8	FL369	-54.2	1.0	1:59				
LAX-ORD	9/18/78	28	2:15	-54	FL371	0:09	36.2N	114.6W	FL366	-49.7	3.9	FL370	-50.7	1.9	2:00				
LAX-ORD	9/20/77	30	2:24	-56	FL370	2:04	40.6N	93.6W	FL364	-51.0	3.7	FL369	-51.8	2.1	2:00				
LAX-ORD	9/27/78	31	2:35	-58	FL370	2:15	40.6N	93.8W	FL364	-54.2	4.4	FL369	-55.5	1.2	2:15				
LAX-ORD	10/ 9/78	31	2:35	-58	FL370	0:50	36.5N	108.5W	FL362	-53.1	5.1	FL369	-54.6	2.4	2:15				
LAX-ORD	11/ 4/78	35	2:49	-59	FL369	2:45	42.1N	92.2W	FL365	-55.9	5.1	FL369	-57.1	1.8	2:30				
LAX-ORD	11/13/77	32	2:34	-59	FL370	0:45	37.1N	109.8W	FL362	-54.7	3.8	FL370	-55.9	1.5	2:00				
LAX-ORD	11/27/76	30	2:15	-56	FL370	1:51	39.6N	95.9W	FL356	-50.3	4.8	FL369	-52.2	2.1	1:53				
LAX-ORD	12/ 5/76	32	2:30	-62	FL370	1:55	39.9N	97.1W	FL359	-54.4	4.8	FL370	-55.9	3.7	2:09				
LAX-ORD	12/ 5/77	30	2:30	-55	FL371	0:35	37.0N	110.7W	FL365	-48.9	3.9	FL370	-49.5	3.3	2:15				
LAX-ORD	12/12/76	31	2:35	-59	FL371	1:05	37.8N	107.6W	FL363	-55.9	4.6	FL370	-57.4	1.9	2:04				
LAX-ORD	12/13/78	30	2:24	-59	FL370	1:45	39.5N	98.6W	FL363	-54.5	5.1	FL369	-55.8	2.8	2:10				
LAX-ORD	12/15/76	33	2:34	-56	FL370	1:39	38.0N	100.9W	FL362	-52.8	2.3	FL370	-53.5	1.0	2:09				
LAX-ORD	12/15/77	30	2:30	-62	FL370	1:20	38.8N	103.6W	FL364	-56.3	5.5	FL369	-57.7	3.7	2:10				
LAX-ORD	12/17/77	30	2:24	-55	FL371	0:19	36.2N	113.4W	FL360	-45.3	7.1	FL370	-46.1	6.7	1:55				
LAX-ORD	12/23/76	31	2:30	-63	FL370	1:45	40.0N	98.6W	FL360	-58.0	4.3	FL370	-59.6	1.2	2:00				
LAX-ORD	12/30/76	28	2:24	-64	FL356	0:09	35.4N	115.3W	FL362	-55.2	4.0	FL370	-55.6	3.1	2:00				
LAX-ORD	12/31/77	28	2:15	-58	FL370	2:09	41.1N	90.4W	FL364	-51.8	3.5	FL369	-52.4	2.9	2:00				
LAX-PIK	11/10/78	93	7:45	-63	FL369	6:54	55.0N	20.1W	FL331	-52.1	6.6	FL329	-52.0	3.4	5:19	FL368	-62.2	1.4	1:09
LAX-PPT	5/13/79	85	7:00	-55	FL391	6:09	10.3S	145.2W	FL361	-47.9	4.5	FL350	-45.6	2.7	4:44	FL390	-53.9	1.8	1:55
LAX-PPT	8/14/77	76	6:35	-47	FL350	6:20	14.7S	147.6W	FL342	-42.3	4.6	FL350	-44.4	1.8	5:20				
LAX-PPT	8/21/77	77	6:40	-52	FL370	6:25	14.9S	147.7W	FL355	-45.9	4.1	FL349	-44.5	1.5	3:40	FL370	-49.9	1.0	2:30
LAX-PPT	10/22/78	78	6:44	-58	FL391	3:24	7.5N	136.2W	FL373	-52.3	5.3	FL350	-46.1	1.1	2:00	FL390	-56.8	1.4	3:26
LAX-PPT	12/11/77	86	6:53	-54	FL390	3:28	7.9N	135.8W	FL373	-49.7	4.4	FL350	-44.2	2.6	1:36	FL370	-48.6	1.8	1:27
LAX-SEA	3/29/77	21	1:35	-53	FL367	0:07	35.7N	119.1W	FL378	-49.3	2.0	FL390	-53.7	1.5	3:19				
LAX-SEA	4/ 1/77	19	1:28	-61	FL389	1:22	45.0N	122.0W	FL380	-53.8	4.4	FL389	-48.7	1.4	1:14				
LAX-SEA	4/ 9/77	15	1:13	-63	FL390	0:13	37.2N	119.6W	FL381	-54.4	6.2	FL389	-54.9	3.4	1:07				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LAX-SEA	4/11/75	17	1:18		-59	FL391	1:14	45.1N	121.7W	FL380	-50.4	5.3								
LAX-SEA	5/16/75	17	1:19		-56	FL390	0:39	41.0N	120.5W	FL375	-51.4	4.6								
LAX-SEA	6/ 4/77	17	1:27		-60	FL390	0:07	35.6N	119.0W	FL373	-55.4	8.9								
LHR-ATH	8/23/76	29	2:24		-57	FL370	0:39	48.6N	9.3E	FL360	-52.0	4.9	FL389	-59.4	.5	1:19				
LHR-ATH	8/30/76	28	2:20		-57	FL371	0:50	48.4N	10.8E	FL364	-51.4	4.3	FL369	-53.7	3.3	1:54				
LHR-BAH	8/ 7/77	55	5:06		-49	FL331	0:20	49.6N	7.1E	FL329	-39.5	6.9	FL370	-53.0	1.9	1:54				
LHR-BAH	8/20/77	56	4:54		-52	FL330	0:20	49.5N	7.3E	FL328	-40.2	6.3	FL330	-39.8	6.7	4:45				
LHR-BAH	8/31/77	60	5:04		-48	FL329	0:04	50.7N	4.8E	FL330	-40.3	5.3	FL330	-40.3	6.0	4:34				
LHR-BAH	12/30/77	58	5:00		-65	FL370	3:10	38.9N	38.2E	FL357	-55.1	6.3	FL330	-49.0	3.6	1:15	FL370	-58.0	4.7	3:20
LHR-BEG	4/21/77	18	1:24		-61	FL370	0:30	49.2N	8.3E	FL365	-58.1	4.3	FL370	-59.3	1.8	1:15				
LHR-BOM	1/ 8/77	85	7:16		-57	FL370	6:14	26.5N	65.2E	FL313	-51.4	2.6	FL290	-51.4	1.9	4:19	FL330	-49.2	2.1	1:35
LHR-BOM	1/17/77	86	7:24		-62	FL330	3:14	39.3N	35.8E	FL319	-53.5	4.8	FL370	-54.7	1.4	1:07				
LHR-BOM	1/24/77	85	7:15		-59	FL330	2:34	40.5N	29.7E	FL323	-52.9	3.9	FL290	-51.5	3.9	1:49	FL330	-54.4	4.7	5:19
LHR-BOM	4/ 4/77	85	7:29		-58	FL370	5:04	33.4N	54.1E	FL324	-48.3	5.2	FL290	-50.3	.5	2:25	FL329	-55.7	3.4	3:34
LHR-BOM	4/ 7/77	88	7:19		-56	FL331	0:29	48.6N	9.4E	FL343	-50.3	4.5	FL270	-41.4	3.0	1:30	FL331	-48.3	1.0	1:40
LHR-BOM	4/25/77	91	7:10		-51	FL330	0:34	47.7N	10.5E	FL309	-44.8	3.3	FL370	-53.4	2.8	2:39				
LHR-BOM	5/ 4/77	89	7:34		-52	FL331	1:59	43.5N	21.9E	FL335	-47.0	3.9	FL331	-53.3	1.6	4:30	FL370	-45.2	1.4	2:24
LHR-BOM	6/25/77	89	7:08		-45	FL289	1:18	45.5N	17.5E	FL316	-37.1	4.4	FL290	-45.4	2.2	3:07	FL331	-50.5	1.3	2:45
LHR-BOM	7/21/77	67	7:24		-43	FL290	0:10	50.3N	6.0E	FL320	-33.9	3.4	FL370	-47.5	.6	2:39				
LHR-BOM	7/28/77	81	6:59		-43	FL291	0:00	50.7N	5.0E	FL315	-33.2	4.9	FL289	-42.3	1.5	2:18	FL331	-33.9	1.9	4:39
LHR-BOM	8/ 4/76	93	7:27		-46	FL290	0:50	47.1N	13.4E	FL316	-36.0	4.8	FL290	-38.0	2.7	2:09	FL330	-32.5	2.3	4:54
LHR-BOM	8/ 7/76	87	7:24		-49	FL330	1:15	45.4N	18.0E	FL322	-36.2	5.5	FL290	-37.1	5.7	2:34	FL330	-30.7	1.7	4:19
LHR-BOM	9/ 3/77	88	7:24		-38	FL290	0:04	50.4N	4.9E	FL317	-35.0	2.6	FL290	-41.6	3.3	2:18	FL330	-33.3	2.5	4:57
LHR-BOM	9/27/76	85	7:34		-51	FL330	2:31	40.5N	30.3E	FL318	-40.8	5.3	FL329	-35.8	5.8	6:09				
LHR-BOM	10/11/76	90	7:34		-52	FL330	3:32	38.1N	41.2E	FL325	-46.4	5.1	FL290	-36.5	1.6	2:15	FL330	-34.4	2.7	4:54
LHR-BOM	10/16/76	95	7:27		-51	FL330	3:52	37.8N	44.1E	FL313	-43.6	4.5	FL330	-47.6	4.2	0:00	FL330	-41.6	6.0	0:00
LHR-BOM	10/24/77	81	7:09		-51	FL330	3:19	38.8N	38.5E	FL311	-42.6	3.4	FL289	-41.8	3.7	2:43	FL330	-45.0	4.5	4:29
LHR-BOM	11/15/76	89	7:25		-53	FL290	1:15	45.6N	17.3E	FL322	-48.8	3.2	FL289	-42.5	1.0	3:09	FL330	-42.6	4.5	3:54
LHR-BOM	11/21/77	87	7:23		-57	FL331	3:08	39.1N	36.6E	FL317	-47.3	5.6	FL290	-48.8	3.0	2:39	FL330	-49.6	3.4	3:19
LHR-BOM	11/22/76	87	7:30		-54	FL330	3:04	39.1N	36.5E	FL316	-46.2	5.5	FL369	-48.1	.6	1:04				
LHR-BOM	12/ 3/77	88	7:25		-54	FL330	4:15	37.1N	47.2E	FL308	-48.4	3.9	FL290	-47.6	1.6	2:13	FL330	-47.2	6.8	4:59
LHR-BOM	12/10/76	86	6:57		-51	FL330	4:42	32.7N	55.5E	FL314	-46.5	3.2	FL290	-45.8	1.4	2:44	FL329	-46.4	6.8	4:40
LHR-BOS	4/30/78	65	5:30		-57	FL350	2:00	54.0N	30.6W	FL359	-50.3	5.2	FL291	-49.5	2.5	4:05	FL330	-47.7	3.5	3:04
LHR-BOS	7/ 9/76	69	5:33		-57	FL396	5:29	44.5N	69.3W	FL401	-49.1	4.3	FL290	-45.6	3.1	2:27	FL329	-47.2	3.0	4:15
LHR-BOS	7/12/76	65	5:29		-57	FL430	4:49	47.3N	64.6W	FL401	-49.9	5.0	FL349	-52.4	4.5	3:30	FL389	-44.8	1.5	1:25
LHR-BOS	8/18/77	71	6:20		-56	FL354	1:41	49.0N	21.7W	FL359	-50.7	3.8	FL390	-47.2	2.5	2:53	FL430	-52.7	1.2	2:06
LHR-BOS	9/15/76	72	5:59		-57	FL390	4:49	47.8N	59.0W	FL371	-50.5	5.0	FL391	-48.0	5.1	3:30	FL430	-53.7	1.7	1:33
LHR-BOS	9/16/76	73	6:04		-57	FL389	5:24	48.0N	66.5W	FL358	-48.4	5.9	FL351	-52.5	2.1	2:25	FL370	-50.4	1.6	3:24
LHR-BOS	9/22/77	65	5:37		-62	FL368	3:47	51.2N	51.9W	FL362	-56.4	2.4	FL359	-48.6	4.6	1:55	FL379	-48.0	4.1	1:19
LHR-BOS	9/26/77	68	6:04		-68	FL410	4:29	51.4N	56.3W	FL402	-55.8	6.6	FL389	-54.8	2.6	1:54				
LHR-BOS	9/27/77	75	6:29		-67	FL410	4:49	49.6N	56.0W	FL398	-57.4	5.2	FL349	-46.5	4.8	4:00	FL389	-53.9	2.7	1:39
LHR-BOS	10/ 4/76	66	5:44		-65	FL390	4:59	49.5N	66.7W	FL387	-49.1	6.1	FL350	-56.9	1.3	3:26	FL390	-56.1	2.2	1:40
LHR-BOS	10/ 7/77	70	5:59		-59	FL390	0:39	56.0N	9.9W	FL401	-52.1	3.1	FL390	-51.3	4.3	3:05	FL410	-58.7	6.0	1:50
LHR-BOS	10/ 8/77	67	5:54		-64	FL390	5:19	46.8N	65.1W	FL388	-52.0	5.2	FL390	-56.7	3.6	3:19	FL409	-62.5	3.0	1:49
LHR-BOS	10/ 9/77	69	5:59		-64	FL410	5:19	47.4N	64.4W	FL385	-50.6	6.1	FL389	-49.2	6.2	5:30				
LHR-BOS	10/10/77	76	6:32		-65	FL391	0:49	53.5N	11.6W	FL389	-57.4	4.7	FL390	-52.7	4.0	1:24	FL410	-52.2	2.3	4:09
LHR-BOS	10/11/77	68	5:54		-67	FL414	0:11	53.5N	3.4W	FL425	-53.8	4.7	FL391	-52.1	5.0	5:39				
													FL429	-52.7	3.3	5:03				





APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LHR-JFK	10/ 5/76	71	6:15		-64	FL410	4:54	48.9N	61.5W	FL398	-53.2	6.6	FL389	-53.0	7.1	1:50	FL410	-55.4	4.9	3:30
LHR-JFK	10/ 9/77	79	6:49		-59	FL370	5:00	49.8N	59.7W	FL343	-51.4	3.4	FL330	-50.1	1.1	2:34	FL350	-51.3	2.9	1:45
LHR-JFK	10/10/78	69	5:45		-57	FL371	5:10	45.5N	66.7W	FL355	-48.7	4.1	FL370	-57.1	1.1	1:10				
LHR-JFK	10/12/77	74	6:39		-61	FL430	4:44	50.8N	60.2W	FL403	-53.9	4.2	FL349	-49.2	3.2	2:25	FL370	-47.0	3.7	2:09
LHR-JFK	10/12/78	70	6:05		-59	FL352	4:03	49.0N	54.0W	FL341	-54.0	2.8	FL390	-51.1	2.1	3:54	FL430	-58.8	1.1	2:15
LHR-JFK	10/16/78	72	5:53		-56	FL345	0:55	52.0N	13.5W	FL343	-52.2	3.0	FL330	-55.3	1.7	3:41	FL370	-51.4	1.5	1:20
LHR-JFK	10/17/77	72	6:07		-52	FL330	0:39	53.9N	13.9W	FL333	-46.6	3.4	FL350	-52.9	2.1	4:38				
LHR-JFK	10/19/78	72	6:04		-60	FL371	3:26	50.1N	45.8W	FL357	-53.6	3.2	FL330	-47.7	2.3	4:52				
LHR-JFK	10/22/77	69	6:08		-55	FL391	6:04	42.4N	70.9W	FL330	-45.0	4.8	FL350	-53.6	1.6	3:00	FL370	-54.3	2.7	2:33
LHR-JFK	10/26/76	74	6:18		-64	FL430	6:14	42.9N	70.9W	FL403	-53.1	4.3	FL311	-42.6	3.7	3:40				
LHR-JFK	10/30/78	74	6:04		-59	FL350	4:39	50.7N	62.5W	FL335	-49.3	4.3	FL390	-50.5	2.0	3:49	FL429	-57.9	2.7	2:05
LHR-JFK	11/ 2/76	79	6:24		-54	FL349	6:23	42.4N	71.5W	FL358	-46.5	1.8	FL330	-47.1	2.6	3:34	FL349	-54.0	3.3	1:54
LHR-JFK	11/ 6/78	72	6:09		-68	FL420	3:55	49.9N	50.3W	FL403	-57.8	6.0	FL349	-46.0	1.4	2:30	FL369	-46.6	1.0	1:56
LHR-JFK	11/21/78	80	6:54		-63	FL370	6:44	42.5N	71.4W	FL327	-52.5	4.6	FL391	-55.9	6.2	3:39	FL430	-61.5	1.8	2:04
LHR-JFK	12/16/78	71	6:14		-63	FL370	6:04	42.9N	70.5W	FL345	-54.8	5.7	FL309	-50.4	2.1	4:20	FL369	-58.2	2.6	1:49
LHR-JFK	12/19/76	73	6:11		-64	FL360	1:52	56.1N	26.6W	FL361	-54.5	5.0	FL339	-56.4	5.0	3:09	FL369	-52.4	6.6	2:00
LHR-JFK	12/31/76	70	5:58		-60	FL350	3:19	53.9N	46.3W	FL349	-52.6	4.8	FL359	-54.9	5.3	3:31	FL389	-47.2	1.4	1:33
LHR-LAX	2/10/79	110	9:28		-69	FL390	8:18	41.8N	108.4W	FL340	-54.8	6.5	FL329	-53.5	1.6	2:54	FL350	-49.2	3.2	2:05
LHR-LAX	5/ 2/79	117	9:53		-60	FL430	9:28	39.1N	120.1W	FL385	-48.9	4.7	FL310	-53.6	3.4	4:13				
LHR-LAX	5/ 9/79	116	9:46		-60	FL345	0:04	53.5N	1.9W	FL391	-50.6	2.6	FL390	-64.2	3.9	2:09	FL390	-47.1	2.5	3:39
LHR-LAX	6/13/79	118	10:07		-64	FL430	9:52	36.1N	115.1W	FL385	-48.9	8.8	FL349	-45.3	.8	2:58	FL430	-57.2	1.2	1:20
LHR-LAX	6/19/78	108	9:44		-65	FL431	9:34	36.3N	119.8W	FL388	-46.2	7.2	FL409	-53.0	2.8	1:09	FL389	-49.5	1.6	4:46
LHR-LAX	6/26/78	117	9:49		-56	FL350	0:34	57.3N	5.2W	FL382	-46.1	6.0	FL369	-49.2	1.2	1:24				
LHR-LAX	7/ 1/78	119	9:49		-60	FL392	6:29	52.5N	91.1W	FL382	-49.7	6.0	FL430	-51.8	1.8	2:09	FL390	-48.6	6.9	3:30
LHR-LAX	7/ 4/78	123	10:02		-60	FL370	2:03	63.8N	22.0W	FL384	-48.5	6.4	FL350	-41.4	4.6	3:35				
LHR-LAX	7/ 9/78	119	9:54		-58	FL411	9:30	37.2N	115.1W	FL382	-49.3	5.8	FL430	-59.6	1.8	2:19	FL370	-40.8	4.0	1:39
LHR-LAX	7/11/78	120	9:59		-59	FL371	2:19	65.4N	27.5W	FL379	-47.4	6.7	FL350	-42.9	5.9	1:04	FL410	-48.4	2.6	1:49
LHR-LAX	7/15/78	116	9:49		-55	FL392	8:14	46.3N	111.2W	FL377	-47.9	5.9	FL391	-41.8	4.5	2:09				
LHR-LAX	7/21/78	120	9:54		-62	FL411	8:49	43.5N	117.7W	FL379	-49.9	7.5	FL430	-56.9	4.4	1:45	FL390	-41.5	3.2	2:49
LHR-LAX	7/27/78	114	9:16		-64	FL430	9:01	36.4N	114.8W	FL389	-50.5	7.5	FL349	-46.4	7.6	3:09	FL391	-49.0	5.9	3:00
LHR-LAX	8/ 2/78	111	9:09		-64	FL431	8:44	37.3N	114.1W	FL389	-50.5	7.2	FL409	-49.9	2.7	3:24				
LHR-LAX	8/ 8/78	116	9:34		-61	FL391	4:19	66.2N	68.2W	FL373	-54.7	3.3	FL351	-46.8	6.4	2:54	FL390	-41.9	1.3	3:30
LHR-LAX	8/13/78	118	9:54		-59	FL410	9:49	35.8N	119.6W	FL383	-47.8	5.2	FL411	-54.3	1.7	2:45	FL370	-48.2	4.7	2:05
LHR-LAX	9/ 3/78	115	9:49		-59	FL370	1:04	60.0N	8.6W	FL378	-51.5	4.7	FL370	-55.1	4.9	2:20	FL410	-54.7	2.6	2:39
LHR-LAX	9/ 5/78	119	9:38		-63	FL391	6:04	51.1N	85.4W	FL378	-54.0	5.9	FL410	-51.8	3.1	3:05	FL370	-44.4	7.1	2:59
LHR-LAX	9/10/78	112	9:49		-61	FL410	9:44	36.6N	119.9W	FL380	-48.8	4.1	FL390	-43.6	4.3	2:09	FL411	-51.0	4.5	2:34
													FL349	-50.9	2.3	3:00	FL391	-47.0	6.2	6:19
													FL350	-50.4	2.8	2:30	FL371	-48.8	9.6	2:30
													FL391	-42.7	3.6	1:49	FL411	-56.2	4.3	2:55
													FL350	-45.1	3.7	1:07	FL370	-43.6	3.6	1:59
													FL389	-48.5	2.9	2:54	FL430	-62.0	.9	1:34
													FL371	-51.8	8.0	1:45	FL390	-45.7	3.6	4:19
													FL430	-59.5	3.1	1:40				
													FL350	-56.1	1.5	2:59	FL390	-54.5	3.3	5:45
													FL350	-53.5	3.2	2:05	FL370	-48.1	4.5	1:50
													FL390	-43.0	3.3	2:30	FL409	-48.2	3.6	3:00
													FL370	-50.0	4.6	3:34	FL390	-52.6	4.3	5:30
													FL370	-51.8	3.5	3:44	FL390	-56.3	5.0	4:43
													FL330	-44.4	.6	1:14	FL370	-46.6	.8	2:15
													FL390	-51.0	1.8	2:50	FL410	-51.0	3.7	2:35



APPENDIX B  
FLIGHT SUMMARY

	-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
	ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
109	LHR-LAX	9/30/78	120	10:14	-64	FL411	9:39	37.7N	113.0W	FL384	-52.9	6.5	FL350	-50.0	2.2	1:55	FL370	-49.6	4.7	2:24
	LHR-LAX	10/ 6/78	114	9:43	-64	FL391	7:28	47.3N	100.2W	FL375	-54.4	4.9	FL390	-45.5	1.4	1:09	FL411	-59.0	3.9	4:04
	LHR-LAX	10/16/78	127	10:34	-66	FL401	10:34	35.2N	119.6W	FL374	-50.1	5.1	FL350	-52.1	3.4	2:24	FL370	-58.3	3.3	1:03
	LHR-LAX	10/21/78	115	9:44	-59	FL371	1:04	59.0N	10.0W	FL384	-50.7	3.1	FL390	-55.2	3.7	5:39	FL390	-50.7	1.2	1:35
	LHR-LAX	10/27/78	114	9:57	-63	FL431	8:57	40.7N	109.9W	FL377	-53.1	4.8	FL350	-46.1	1.9	5:24	FL390	-49.9	1.9	4:54
	LHR-LAX	11/17/78	112	9:45	-65	FL390	8:49	43.3N	118.3W	FL351	-55.4	6.4	FL410	-56.5	2.5	2:54	FL390	-47.7	.7	2:30
	LHR-LPA	12/13/78	17	1:24	-63	FL390	0:00	37.1N	6.3W	FL384	-60.6	5.2	FL370	-50.1	4.0	2:04	FL390	-47.7	.7	2:30
	LHR-SEA	2/18/79	101	8:06	-68	FL351	4:56	65.9N	89.6W	FL342	-58.5	5.0	FL430	-60.9	1.7	1:15	FL349	-56.6	4.4	3:54
	LHR-SEA	3/25/79	100	8:14	-64	FL330	2:34	71.0N	26.1W	FL343	-54.1	4.3	FL329	-53.2	4.8	2:14	FL349	-56.6	4.4	3:54
	LHR-SEA	3/26/76	99	8:28	-62	FL350	4:45	74.4N	86.8W	FL345	-53.1	6.0	FL389	-59.3	6.6	2:15	FL350	-61.0	3.0	5:00
	LHR-SEA	3/26/79	99	8:09	-64	FL341	2:39	72.8N	26.4W	FL346	-52.4	3.8	FL389	-61.9	.9	1:14	FL330	-60.9	2.7	1:04
	LHR-SEA	4/ 4/79	103	8:29	-63	FL351	1:30	62.0N	16.5W	FL346	-54.2	4.8	FL390	-55.3	4.4	2:15	FL330	-60.9	2.7	1:04
	LHR-SEA	4/ 5/79	104	8:58	-62	FL350	7:20	58.0N	110.5W	FL341	-55.3	3.8	FL310	-56.4	3.0	2:19	FL390	-53.0	1.2	1:30
	LHR-SEA	4/22/76	93	8:07	-59	FL332	0:11	54.7N	3.3W	FL358	-51.6	4.3	FL350	-50.5	1.7	2:54	FL350	-58.8	1.9	2:44
	LHR-SEA	6/10/77	95	8:22	-58	FL390	2:09	64.8N	25.6W	FL396	-46.4	5.3	FL311	-56.3	1.1	1:59	FL350	-58.8	1.9	2:44
	LHR-SEA	6/11/78	97	8:14	-57	FL351	7:39	52.2N	117.6W	FL322	-44.8	4.4	FL370	-48.4	2.0	1:20	FL350	-51.8	4.1	3:50
	LHR-SEA	6/12/77	92	8:08	-53	FL380	8:08	48.7N	121.1W	FL403	-45.1	3.3	FL330	-51.6	1.0	1:24	FL350	-54.6	4.8	6:59
	LHR-SEA	6/17/77	99	8:14	-63	FL391	7:59	50.4N	119.4W	FL389	-49.4	6.1	FL330	-53.1	3.3	1:04	FL350	-55.5	4.1	2:31
	LHR-SEA	6/19/77	69	8:08	-63	FL390	1:15	57.6N	17.6W	FL403	-52.2	4.8	FL332	-55.6	2.9	2:31	FL351	-52.8	4.0	1:35
	LHR-SEA	6/21/77	95	8:14	-65	FL391	1:30	61.6N	15.9W	FL402	-52.2	6.7	FL371	-49.0	2.0	4:40	FL428	-49.8	2.0	1:30
	LHR-SEA	6/24/77	95	8:19	-61	FL409	6:59	56.3N	113.0W	FL386	-47.2	7.4	FL390	-46.4	5.6	5:47	FL350	-48.3	3.6	2:39
	LHR-SEA	6/26/77	92	8:14	-57	FL398	8:14	48.9N	121.0W	FL404	-43.9	3.5	FL310	-43.4	3.7	4:54	FL409	-43.0	2.6	2:15
	LHR-SEA	6/28/77	98	8:19	-58	FL370	7:59	50.7N	120.1W	FL387	-46.0	3.7	FL390	-44.4	2.6	3:45	FL429	-48.8	1.4	1:39
	LHR-SEA	7/10/78	99	8:09	-63	FL391	6:44	57.6N	111.2W	FL352	-45.2	6.5	FL429	-48.8	1.4	1:39	FL390	-49.4	6.1	6:04
	LHR-SEA	8/31/77	89	8:24	-63	FL350	5:09	70.2N	91.9W	FL338	-49.6	6.2	FL390	-49.4	6.1	6:04	FL390	-53.5	5.5	4:27
	LHR-SEA	9/ 2/77	87	8:14	-63	FL349	4:29	67.7N	77.6W	FL351	-51.0	6.2	FL390	-52.1	8.0	4:04	FL429	-50.3	2.4	0:00
	LHR-SEA	10/ 8/78	98	8:21	-64	FL350	3:37	69.5N	55.7W	FL342	-53.5	5.7	FL410	-54.9	4.5	2:35	FL410	-48.0	1.5	1:50
	LHR-SEA	10/19/76	94	7:54	-63	FL390	7:34	50.7N	118.9W	FL365	-51.9	5.0	FL370	-43.2	4.7	3:30	FL390	-44.4	6.3	1:45
	LHR-SEA	10/20/78	105	8:49	-57	FL365	8:39	49.7N	120.0W	FL329	-48.8	4.2	FL389	-42.2	1.9	4:25	FL428	-45.3	2.9	3:07
	LHR-SEA	11/ 5/76	98	8:14	-61	FL346	2:38	70.5N	35.3W	FL349	-47.1	4.7	FL390	-45.2	1.9	4:49	FL409	-42.0	.8	1:09
	LHR-SEA	12/ 8/77	97	8:06	-64	FL350	2:53	68.1N	41.2W	FL343	-54.8	3.9	FL370	-49.9	4.4	1:54	FL370	-39.9	1.0	1:09
	LHR-SEA	12/10/77	100	8:18	-60	FL351	8:18	48.7N	121.1W	FL349	-53.0	3.8	FL330	-45.0	4.3	1:39	FL390	-54.6	3.4	1:30
	LHR-SEA	12/28/76	109	8:30	-66	FL370	2:54	65.1N	38.2W	FL364	-60.6	4.1	FL390	-51.6	6.8	2:20	FL350	-54.3	6.8	3:29
													FL390	-57.2	1.2	1:34	FL370	-49.5	2.6	2:00
													FL310	-54.6	3.3	2:24	FL350	-50.7	3.3	2:04
													FL390	-52.7	6.2	2:30	FL349	-49.3	4.7	1:59
													FL329	-53.1	3.6	1:08	FL369	-55.0	3.0	2:58
													FL368	-45.3	.9	2:37	FL330	-55.5	2.1	1:16
													FL349	-56.5	2.8	2:24	FL370	-55.4	1.4	2:15
													FL309	-47.4	2.5	1:20	FL370	-61.2	3.9	5:15
													FL350	-53.0	2.3	1:45				
													FL349	-58.3	4.0	2:09				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
LHR-SFO	6/11/77	106	9:26	-62	FL410	9:21	39.0N	122.5W	FL387	-47.1	6.3	FL371	-48.7	5.6	2:44	FL389	-42.1	2.9	3:15
LHR-SFO	6/12/78	112	9:25	-61	FL390	9:14	38.8N	120.0W	FL348	-47.0	7.6	FL409	-52.6	3.8	2:46	FL310	-42.9	1.6	2:00
LHR-SFO	6/13/77	110	9:24	-56	FL369	9:24	39.1N	122.6W	FL396	-46.9	4.7	FL350	-44.2	2.0	1:10	FL330	-40.2	2.7	1:54
LHR-SFO	6/14/77	107	9:19	-59	FL370	0:10	54.7N	13.3W	FL390	-48.0	4.9	FL389	-44.1	3.7	5:34	FL390	-58.8	1.5	2:15
LHR-SFO	6/15/77	134	9:24	-60	FL410	9:19	39.7N	122.4W	FL391	-47.1	6.3	FL370	-52.4	4.0	1:34	FL409	-50.8	2.3	3:20
LHR-SFO	6/16/77	111	9:19	-64	FL390	1:39	58.4N	23.2W	FL397	-54.2	5.5	FL409	-49.3	1.2	2:34	FL390	-45.5	4.9	4:34
LHR-SFO	6/20/77	111	9:14	-63	FL390	1:00	58.3N	12.7W	FL388	-52.7	6.3	FL390	-45.2	6.0	5:49	FL409	-50.8	4.3	2:30
LHR-SFO	6/22/77	112	9:22	-67	FL410	8:52	42.6N	120.4W	FL384	-51.1	7.5	FL389	-56.8	4.8	4:04	FL409	-52.1	5.2	4:34
LHR-SFO	6/25/77	104	9:19	-65	FL410	8:39	44.3N	121.8W	FL389	-47.3	8.2	FL390	-52.7	5.3	8:29	FL390	-47.9	2.9	2:39
LHR-SFO	6/27/77	113	9:29	-64	FL409	8:19	47.5N	117.7W	FL382	-48.8	7.7	FL369	-47.9	8.4	2:37	FL410	-57.8	5.7	3:00
LHR-SFO	6/29/77	107	9:09	-66	FL409	8:14	46.0N	118.7W	FL388	-48.2	7.6	FL369	-44.1	2.5	3:24	FL390	-41.5	2.3	2:40
LHR-SFO	7/11/78	114	9:24	-59	FL390	7:04	57.2N	117.8W	FL357	-45.1	4.9	FL409	-55.2	9.3	2:45	FL350	-47.5	6.4	2:00
LHR-SFO	8/20/77	105	9:03	-59	FL351	4:03	69.8N	75.3W	FL346	-50.6	5.7	FL390	-47.2	4.3	2:30	FL390	-47.2	4.3	2:30
LHR-SFO	10/ 9/78	114	9:29	-60	FL387	7:14	52.7N	106.2W	FL352	-53.3	5.0	FL390	-43.9	1.8	5:29	FL409	-56.6	7.4	2:39
LHR-SFO	10/21/78	110	9:11	-58	FL350	3:03	69.4N	43.7W	FL341	-50.9	4.0	FL309	-45.5	1.0	2:24	FL409	-58.9	7.4	1:58
LPA-BGR	12/13/78	66	5:40	-52	FL310	4:20	41.8N	55.3W	FL306	-43.9	3.9	FL390	-50.4	3.4	3:04	FL369	-40.4	.6	1:50
MEL-AKL	1/12/78	27	2:10	-49	FL330	1:24	37.9S	164.1E	FL329	-44.9	3.9	FL309	-48.9	.8	1:30	FL330	-55.2	.8	2:15
MEL-AKL	1/17/78	27	2:15	-46	FL330	2:09	37.4S	171.7E	FL329	-42.9	2.5	FL350	-44.6	5.3	2:06	FL389	-56.1	1.2	1:21
MEL-AKL	1/24/78	31	2:13	-46	FL330	0:04	37.4S	148.8E	FL329	-42.2	1.7	FL330	-52.1	3.4	2:19	FL350	-51.7	4.9	4:05
MEL-AKL	2/16/78	22	1:54	-52	FL331	1:15	37.9S	165.2E	FL330	-47.8	2.7	FL390	-59.0	.5	2:05	FL310	-48.2	2.5	1:30
MEL-AKL	2/23/78	29	2:19	-48	FL331	1:39	37.9S	165.6E	FL330	-46.3	1.4	FL309	-48.2	2.5	1:30	FL309	-43.9	4.1	4:50
MEL-AKL	2/28/78	30	2:21	-47	FL330	1:56	37.7S	168.6E	FL328	-43.5	2.6	FL330	-45.6	3.1	2:04	FL330	-45.6	3.1	2:04
MEL-AKL	12/24/77	26	2:09	-54	FL351	0:54	38.0S	158.3E	FL341	-49.8	2.9	FL330	-43.3	1.7	2:09	FL330	-43.3	1.7	2:09
MEL-BKK	8/14/76	92	7:59	-43	FL351	5:29	6.6S	107.7E	FL319	-38.4	3.6	FL329	-42.3	1.7	2:08	FL329	-42.3	1.7	2:08
MEL-BKK	12/ 7/77	93	7:46	-54	FL390	7:16	8.1N	101.6E	FL354	-46.0	4.5	FL330	-47.8	2.7	1:54	FL330	-47.8	2.7	1:54
MEL-BKK	12/14/77	91	7:55	-44	FL350	5:30	4.7S	111.3E	FL331	-39.4	4.2	FL330	-46.5	.8	2:15	FL330	-46.5	.8	2:15
MEL-CHC	11/12/76	58	4:08	-60	FL370	2:26	54.1S	161.3E	FL358	-55.7	3.0	FL329	-43.8	2.1	2:07	FL329	-43.8	2.1	2:07
MEL-CHC	12/19/77	23	1:49	-50	FL330	0:04	37.6S	149.2E	FL319	-38.4	3.6	FL350	-51.5	1.8	1:15	FL350	-51.5	1.8	1:15
MEL-KUL	12/18/76	75	6:29	-42	FL350	4:09	11.6S	117.9E	FL331	-38.4	3.6	FL310	-36.1	2.3	4:09	FL310	-36.1	2.3	4:09
MEL-MEL	11/11/76	29	1:45	-52	FL360	1:13	36.7S	141.9E	FL335	-47.6	3.5	FL340	-47.9	1.4	1:50	FL340	-47.9	1.4	1:50
MEL-PER	1/27/77	36	2:54	-49	FL350	0:09	37.7S	141.0E	FL348	-45.3	3.1	FL390	-53.3	.5	1:19	FL390	-53.3	.5	1:19
MEL-PER	2/ 2/77	35	2:55	-60	FL390	0:15	37.7S	140.3E	FL383	-54.1	4.6	FL310	-35.6	2.9	3:14	FL310	-35.6	2.9	3:14
MEL-PER	2/16/77	34	2:45	-52	FL390	0:20	37.5S	139.5E	FL386	-49.8	3.6	FL350	-55.5	1.1	2:11	FL350	-55.5	1.1	2:11
MEL-PER	3/23/77	39	3:10	-51	FL389	1:30	35.6S	130.7E	FL342	-43.1	7.1	FL330	-45.0	3.1	1:44	FL330	-45.0	3.1	1:44
MEL-PER	4/ 3/77	31	2:44	-53	FL351	0:30	37.3S	138.3E	FL341	-49.6	3.6	FL310	-36.5	3.8	2:04	FL310	-36.5	3.8	2:04
MEL-PER	4/24/77	31	2:29	-51	FL311	0:04	37.7S	141.5E	FL309	-49.7	2.3	FL350	-41.5	.6	2:49	FL350	-41.5	.6	2:49
MEL-PER	5/ 3/77	34	2:43	-47	FL311	0:44	36.5S	135.0E	FL309	-45.4	1.8	FL360	-50.6	.7	1:07	FL360	-50.6	.7	1:07
MEL-PER	6/16/77	13	1:59	-48	FL310	0:00	36.2S	133.4E	FL309	-42.4	3.6	FL350	-45.6	2.3	2:44	FL350	-45.6	2.3	2:44
MEL-PER	6/24/77	37	2:32	-60	FL350	0:21	37.4S	139.1E	FL347	-51.1	5.3	FL389	-55.1	2.1	2:30	FL389	-55.1	2.1	2:30
MEL-PER	7/ 3/77	28	2:49	-59	FL350	1:49	34.6S	126.0E	FL345	-56.5	2.0	FL390	-50.6	.9	2:30	FL390	-50.6	.9	2:30
MEL-PER	7/20/77	39	2:33	-54	FL351	1:01	36.0S	132.2E	FL342	-50.1	2.6	FL350	-46.2	.7	1:09	FL350	-46.2	.7	1:09
MEL-PER	7/27/77	35	3:00	-54	FL350	0:35	37.2S	137.9E	FL348	-51.7	2.1	FL350	-51.2	.8	2:09	FL350	-51.2	.8	2:09
												FL310	-50.1	1.2	2:24	FL310	-50.1	1.2	2:24
												FL310	-45.7	.9	2:37	FL310	-45.7	.9	2:37
												FL309	-42.4	3.6	1:59	FL309	-42.4	3.6	1:59
												FL350	-51.1	5.3	0:00	FL350	-51.1	5.3	0:00
												FL350	-56.8	1.2	2:19	FL350	-56.8	1.2	2:19
												FL350	-50.8	2.4	1:43	FL350	-50.8	2.4	1:43
												FL350	-52.3	.8	2:44	FL350	-52.3	.8	2:44









APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
NRT-HKG	6/ 4/79	39	3:09	-54	FL351	0:10	34.1N	139.3E	FL368	-50.4	6.0	FL350	-52.2	2.0	1:04	FL390	-51.8	.4	1:40
NRT-HKG	6/23/78	40	3:15	-44	FL350	0:30	33.5N	136.4E	FL346	-41.1	3.7	FL350	-42.1	1.1	2:54				
NRT-HKG	7/ 7/78	36	2:54	-44	FL350	1:24	29.2N	126.9E	FL346	-41.8	4.0	FL350	-42.9	.2	2:34				
NRT-HKG	10/15/78	37	3:18	-48	FL350	0:07	34.0N	138.9E	FL348	-42.9	2.4	FL350	-43.3	1.8	2:56				
NRT-HKG	10/29/78	38	3:29	-45	FL351	1:29	28.2N	130.5E	FL339	-40.8	5.1	FL350	-43.8	.5	2:28				
NRT-HNL	1/ 2/78	60	5:04	-52	FL390	3:49	28.2N	170.3W	FL377	-47.8	3.6	FL369	-44.7	.7	2:00	FL390	-51.0	.5	2:39
NRT-HNL	2/20/79	265	5:20	-58	FL370	0:19	35.4N	146.7E	FL370	-52.2	2.1	FL369	-52.2	2.1	5:05				
NRT-HNL	3/13/79	67	5:30	-60	FL370	2:40	32.3N	176.4E	FL367	-49.7	9.3	FL370	-50.5	9.2	5:04				
NRT-HNL	5/ 7/79	71	6:08	-60	FL370	2:29	32.4N	168.7E	FL362	-52.5	4.4	FL350	-49.9	.9	1:42	FL370	-54.6	2.3	3:57
NRT-HNL	6/ 1/78	71	5:56	-56	FL369	3:24	29.7N	178.4E	FL353	-47.3	6.6	FL330	-37.1	1.8	1:24	FL350	-46.6	2.3	1:39
												FL369	-53.6	1.3	2:32				
NRT-HNL	6/20/78	70	5:49	-57	FL370	3:09	31.8N	177.7E	FL354	-48.7	6.8	FL330	-39.2	.9	1:25	FL350	-49.5	1.1	1:09
												FL369	-54.2	1.3	2:45				
NRT-HNL	7/ 4/78	77	6:19	-55	FL370	2:54	30.5N	172.1E	FL358	-49.4	6.8	FL350	-45.9	1.4	1:50	FL370	-54.6	.5	3:30
NRT-HNL	10/14/78	64	5:23	-54	FL370	4:18	27.8N	167.5W	FL362	-49.8	3.3	FL349	-46.4	1.2	1:04	FL369	-51.6	1.3	3:48
NRT-HNL	10/25/78	69	5:51	-58	FL366	0:46	36.6N	152.5E	FL366	-54.4	3.4	FL370	-54.9	2.0	5:00				
NRT-HNL	11/ 6/78	66	5:30	-48	FL354	4:40	26.4N	165.7W	FL344	-42.0	4.5	FL330	-36.3	1.6	1:04	FL353	-45.0	1.8	4:00
NRT-JFK	1/ 8/79	138	11:43	-64	FL350	1:34	45.0N	156.3E	FL376	-54.7	4.6	FL350	-59.4	3.9	2:39	FL369	-55.6	2.9	4:54
NRT-JFK	1/15/79	122	10:34	-66	FL370	5:59	59.5N	138.0W	FL366	-52.9	5.3	FL410	-50.0	2.2	3:23	FL370	-53.5	6.5	5:30
NRT-JFK	1/22/79	129	10:49	-53	FL410	8:58	51.0N	93.0W	FL382	-46.6	4.0	FL310	-50.2	1.2	1:34				
NRT-JFK	1/25/79	133	11:20	-61	FL330	0:49	39.8N	151.7E	FL364	-49.9	5.9	FL409	-54.8	1.8	2:20	FL370	-43.2	2.9	4:54
NRT-JFK	1/28/79	135	11:19	-56	FL329	0:10	37.0N	143.9E	FL375	-48.2	3.8	FL330	-51.6	5.0	4:14	FL409	-50.3	1.4	3:23
NRT-JFK	2/ 1/79	130	11:04	-63	FL371	4:39	58.6N	163.6W	FL384	-51.2	6.6	FL409	-53.6	6.1	2:40	FL370	-45.6	3.5	4:00
NRT-JFK	2/ 5/79	128	10:58	-60	FL370	4:43	58.3N	164.4W	FL387	-49.0	5.4	FL350	-45.7	1.8	1:49	FL370	-47.8	3.2	4:19
NRT-JFK	2/12/79	126	10:38	-65	FL370	2:58	52.7N	173.8E	FL360	-54.4	4.2	FL409	-49.4	3.9	3:45	FL370	-55.1	4.4	2:39
NRT-JFK	2/21/79	132	11:21	-63	FL350	1:10	43.1N	152.7E	FL376	-53.1	4.9	FL350	-55.7	1.3	1:39	FL410	-44.6	2.0	4:09
NRT-JFK	2/27/79	130	13:23	-65	FL410	11:59	46.8N	85.1W	FL365	-51.2	6.9	FL370	-57.5	4.3	1:49	FL390	-44.1	2.4	1:18
NRT-JFK	3/ 2/79	134	11:14	-67	FL377	11:09	42.5N	75.9W	FL378	-49.1	6.1	FL409	-54.7	2.6	4:23	FL370	-54.3	3.7	7:49
NRT-JFK	4/ 5/79	129	10:47	-67	FL370	7:24	57.5N	115.1W	FL371	-53.3	5.0	FL350	-53.4	6.6	2:54	FL369	-48.5	1.6	2:26
NRT-JFK	4/18/79	128	11:07	-70	FL410	9:34	52.1N	88.3W	FL377	-54.1	7.0	FL409	-56.3	1.5	3:41	FL370	-48.1	5.0	5:02
NRT-JFK	4/26/79	126	13:16	-68	FL410	12:55	43.5N	76.9W	FL368	-51.7	7.2	FL350	-51.5	7.2	3:38				
NRT-JFK	4/29/79	132	13:18	-64	FL370	7:04	59.6N	136.5W	FL360	-54.0	6.1	FL410	-58.2	3.7	2:34	FL369	-43.3	2.1	2:39
NRT-JFK	5/ 5/79	125	10:53	-64	FL390	8:23	46.8N	107.9W	FL368	-52.7	5.5	FL350	-47.0	1.6	3:15	FL369	-55.1	6.3	5:19
NRT-JFK	6/ 8/79	127	11:00	-62	FL370	3:21	54.6N	179.4E	FL374	-50.6	5.4	FL410	-55.2	5.5	3:44	FL370	-55.8	2.6	2:14
NRT-JFK	6/11/78	126	10:59	-57	FL370	4:30	61.7N	169.1W	FL363	-47.3	6.2	FL350	-51.4	1.1	3:04	FL370	-53.1	5.1	2:19
NRT-JFK	6/14/78	132	11:02	-61	FL383	5:57	59.3N	144.0W	FL376	-49.2	5.1	FL410	-52.1	1.7	1:58	FL410	-53.7	4.3	2:05
												FL350	-47.2	2.3	2:50	FL349	-43.2	4.7	1:40
												FL409	-60.7	6.2	3:27	FL390	-45.6	1.1	2:24
												FL350	-47.3	4.6	3:51	FL370	-56.8	3.9	3:55
												FL410	-54.9	7.7	2:14	FL369	-55.5	6.4	7:27
												FL350	-52.2	4.3	3:43	FL370	-55.8	2.6	2:14
												FL330	-48.2	1.8	2:54	FL370	-53.1	5.1	2:19
												FL389	-54.3	6.9	4:04	FL410	-53.7	4.3	2:05
												FL350	-51.4	4.1	3:00	FL349	-43.2	4.7	1:40
												FL390	-48.2	1.6	2:44	FL390	-45.6	1.1	2:24
												FL329	-41.7	3.7	1:49	FL370	-48.5	8.1	2:07
												FL369	-53.3	1.6	2:49	FL410	-49.8	1.5	2:24
												FL369	-52.9	3.4	1:40				
												FL349	-49.5	4.0	3:15				
												FL390	-50.0	2.6	2:24				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
NRT-JFK	6/16/78	122	10:30		-60	FL389	5:59	59.4N	136.7W	FL365	-47.7	6.3	FL330	-45.0	4.6	4:25	FL370	-47.2	6.3	1:04
NRT-JFK	6/16/79	137	11:19		-65	FL410	9:39	49.3N	91.0W	FL375	-52.8	5.7	FL390	-50.4	6.2	2:05	FL410	-47.6	4.8	1:15
NRT-JFK	6/21/78	131	11:04		-63	FL411	10:54	42.1N	75.5W	FL375	-48.8	6.4	FL349	-50.7	3.9	2:29	FL370	-50.9	2.9	4:44
NRT-JFK	6/23/78	132	10:58		-58	FL370	3:48	55.8N	176.3W	FL377	-49.3	4.3	FL410	-59.9	4.6	2:30	FL350	-47.8	3.3	1:55
NRT-JFK	6/29/79	499	11:05		-63	FL410	10:34	43.9N	79.4W	FL385	-50.5	6.2	FL371	-53.2	5.3	2:30	FL391	-49.0	2.5	3:00
NRT-JFK	7/ 6/78	133	10:59		-62	FL411	9:29	49.0N	90.4W	FL379	-48.9	6.4	FL410	-51.5	7.1	1:45	FL369	-51.2	2.9	2:30
NRT-JFK	7/18/78	136	11:15		-62	FL410	10:24	45.6N	83.5W	FL370	-48.5	6.6	FL349	-45.7	2.3	2:35	FL410	-52.3	1.6	2:24
NRT-JFK	7/24/78	134	11:04		-61	FL371	3:54	55.9N	175.7W	FL372	-49.0	6.4	FL390	-50.2	1.7	2:45	FL370	-49.5	6.9	2:51
NRT-JFK	7/30/78	52	4:23		-47	FL372	4:23	61.2N	173.4W	FL339	-41.3	2.5	FL350	-47.6	5.0	2:19	FL409	-54.2	4.6	2:15
NRT-JFK	8/ 5/78	134	11:09		-60	FL391	7:09	64.3N	120.7W	FL374	-48.6	8.1	FL390	-50.2	3.4	2:20	FL370	-51.3	5.3	2:04
NRT-JFK	8/10/78	136	11:13		-61	FL410	10:53	42.7N	77.8W	FL374	-49.0	6.9	FL390	-50.5	3.7	2:30	FL410	-64.6	5.5	2:15
NRT-JFK	8/23/78	128	10:59		-62	FL412	9:59	48.6N	83.3W	FL378	-50.9	7.2	FL350	-43.2	3.8	2:05	FL370	-51.2	5.0	3:00
NRT-JFK	8/26/78	126	11:07		-64	FL410	10:02	49.8N	83.0W	FL376	-52.4	6.9	FL390	-46.4	1.5	2:49	FL410	-60.1	2.0	1:19
NRT-JFK	8/31/78	125	10:48		-61	FL410	8:58	47.2N	96.6W	FL377	-49.0	6.8	FL330	-41.7	2.9	2:40	FL370	-51.9	5.8	3:14
NRT-JFK	9/ 7/78	127	10:32		-61	FL370	6:00	62.9N	136.5W	FL369	-50.0	6.8	FL391	-49.9	1.9	2:19	FL410	-53.9	2.5	2:15
NRT-JFK	9/20/78	126	11:04		-67	FL432	10:24	45.0N	81.4W	FL365	-51.4	8.0	FL332	-41.5	1.3	3:18	FL370	-51.6	7.2	3:15
NRT-JFK	9/22/78	130	11:09		-62	FL391	8:09	48.3N	112.6W	FL366	-52.1	5.5	FL350	-39.1	2.9	2:49	FL410	-53.1	3.9	1:20
NRT-JFK	9/26/78	128	10:54		-65	FL410	10:09	46.8N	79.7W	FL386	-54.3	6.2	FL390	-53.7	2.9	3:00	FL350	-45.9	1.1	1:10
NRT-JFK	10/ 3/78	131	11:04		-67	FL412	10:49	42.8N	77.0W	FL381	-51.1	4.7	FL330	-36.9	4.9	1:05	FL390	-50.0	3.7	2:25
NRT-JFK	10/ 9/78	131	11:00		-64	FL409	7:39	50.4N	113.9W	FL384	-52.6	6.4	FL370	-49.8	4.5	3:54	FL372	-48.5	5.6	3:19
NRT-JFK	10/24/78	126	10:49		-68	FL410	10:14	44.4N	81.1W	FL368	-53.2	6.8	FL410	-57.3	2.0	1:49	FL411	-58.2	2.8	2:40
NRT-JFK	10/30/78	122	10:35		-73	FL412	5:55	50.1N	133.7W	FL386	-55.1	10.2	FL350	-45.3	1.0	2:40	FL369	-52.9	4.6	4:22
NRT-JFK	11/30/78	122	10:31		-62	FL410	10:26	42.1N	75.5W	FL367	-50.8	6.6	FL410	-59.0	4.9	3:05	FL350	-50.5	5.5	1:49
NRT-JFK	12/ 6/78	129	10:54		-62	FL410	6:14	58.1N	134.8W	FL366	-50.2	4.8	FL330	-42.3	1.7	1:10	FL410	-55.4	3.0	4:00
NRT-JFK	12/13/78	125	10:50		-69	FL410	6:28	49.4N	132.4W	FL392	-55.4	6.3	FL371	-43.6	4.4	3:03	FL369	-50.7	5.5	5:07
NRT-JFK	12/18/78	114	10:19		-69	FL410	6:19	57.3N	127.9W	FL371	-57.4	5.3	FL330	-42.6	1.2	2:15	FL350	-50.7	3.4	2:44
NRT-JFK	12/27/78	133	11:18		-68	FL370	5:00	58.6N	163.0W	FL367	-56.3	5.3	FL409	-56.7	1.2	2:30	FL370	-51.7	3.8	4:24
NRT-JFK	12/31/78	131	11:04		-66	FL410	10:34	44.8N	80.6W	FL386	-52.0	6.3	FL330	-44.7	2.4	3:49	FL370	-54.1	4.4	2:24
													FL410	-57.9	5.3	2:54	FL410	-53.8	6.0	4:00
													FL350	-50.0	1.3	2:19	FL370	-51.2	2.7	3:00
													FL390	-59.4	1.8	2:09				
													FL349	-48.3	7.1	1:30	FL409	-59.5	2.2	4:00
													FL390	-60.4	3.0	2:14	FL410	-56.6	6.9	4:19
													FL350	-47.5	2.8	2:45	FL409	-54.7	7.0	5:25
													FL410	-54.0	4.4	4:30	FL350	-61.9	2.1	1:09
													FL370	-48.8	3.1	6:24				
													FL330	-52.8	5.4	4:54	FL330	-54.6	1.7	1:09
													FL370	-47.7	2.0	3:34	FL410	-53.8	1.6	3:20
													FL349	-44.8	5.1	3:04	FL370	-43.8	3.2	1:55
													FL410	-54.0	4.7	1:15	FL409	-56.2	4.6	4:34
													FL310	-47.8	2.5	3:30				
													FL389	-56.3	2.1	1:09				
													FL370	-58.3	4.6	3:45				
													FL310	-52.2	2.4	2:59				
													FL409	-59.8	4.1	5:15				
													FL310	-55.3	1.3	1:59				
													FL370	-59.6	6.9	4:19				
													FL350	-47.1	1.7	1:40				
													FL390	-54.4	4.0	2:15				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
NRT-LAX	1/24/79	277	8:28	-62	FL370	5:20	44.9N	151.4W	FL352	-51.7	4.6	FL330	-50.7	2.8	3:21	FL369	-52.7	5.6	4:46
NRT-LAX	2/17/79	96	7:54	-60	FL331	6:29	38.6N	134.5W	FL327	-53.2	2.9	FL330	-53.9	2.6	6:44				
NRT-LAX	5/24/78	100	8:14	-60	FL388	6:24	43.6N	136.9W	FL356	-52.2	3.9	FL330	-49.8	1.7	2:15	FL349	-50.9	2.0	1:09
NRT-LAX	5/25/79	98	8:07	-58	FL370	4:55	40.8N	156.3W	FL349	-48.7	7.2	FL369	-54.2	1.8	2:14	FL388	-55.7	3.1	1:40
NRT-LAX	5/31/79	100	8:14	-57	FL370	7:24	38.0N	127.2W	FL350	-48.1	6.0	FL330	-41.8	2.1	1:50	FL350	-50.7	3.3	1:55
NRT-LAX	6/17/78	74	6:13	-57	FL371	4:47	41.2N	132.0W	FL347	-50.9	3.7	FL370	-55.1	1.7	3:07	FL350	-49.7	1.3	1:30
NRT-LAX	8/ 3/78	70	5:44	-59	FL370	2:30	46.7N	153.1W	FL363	-53.2	4.6	FL330	-41.8	.8	2:19				
NRT-LAX	9/ 7/78	94	7:55	-60	FL370	6:20	41.1N	135.0W	FL348	-48.0	7.5	FL369	-53.4	3.0	3:24	FL350	-53.5	1.4	1:52
NRT-LAX	9/15/78	96	8:13	-60	FL350	3:34	46.7N	174.6W	FL351	-52.6	8.3	FL330	-48.2	1.0	2:20				
NRT-LAX	11/ 3/78	97	7:49	-62	FL370	4:26	48.2N	155.1W	FL350	-52.8	6.1	FL370	-52.5	3.1	1:35				
NRT-LAX	12/ 9/78	95	7:59	-66	FL370	6:54	39.1N	130.7W	FL351	-57.6	4.9	FL369	-54.9	3.5	4:14				
NRT-LAX	12/27/78	102	8:29	-58	FL330	1:34	36.0N	161.1E	FL340	-50.5	4.6	FL310	-38.3	2.4	1:25	FL350	-47.1	.3	1:29
NRT-SFO	1/ 5/79	93	7:52	-61	FL355	7:52	37.8N	124.8W	FL391	-51.0	3.1	FL369	-54.6	3.1	3:45				
NRT-SFO	1/12/79	98	7:22	-70	FL410	6:29	40.1N	134.7W	FL386	-57.1	7.0	FL310	-36.2	2.5	1:15	FL350	-58.4	1.1	2:15
NRT-SFO	1/19/79	89	7:34	-69	FL410	7:00	41.5N	129.1W	FL395	-53.1	8.5	FL370	-56.1	1.0	2:08	FL349	-54.8	.7	1:37
NRT-SFO	1/24/79	95	7:52	-55	FL410	5:52	46.1N	144.9W	FL399	-49.0	2.7	FL329	-46.3	2.1	1:24	FL370	-57.3	1.9	3:28
NRT-SFO	1/27/79	94	8:04	-61	FL410	6:23	46.1N	140.4W	FL390	-53.0	3.9	FL330	-54.0	2.6	2:19	FL349	-54.6	2.8	1:59
NRT-SFO	1/30/79	100	8:12	-66	FL410	5:12	48.1N	156.4W	FL396	-53.9	6.4	FL369	-62.3	2.6	3:19	FL330	-49.4	5.5	3:15
NRT-SFO	2/ 4/79	90	7:58	-74	FL410	6:23	45.0N	139.5W	FL398	-58.6	8.6	FL290	-47.0	1.1	1:25				
NRT-SFO	2/ 9/79	96	8:09	-66	FL410	7:59	39.6N	125.1W	FL397	-55.9	4.7	FL370	-52.8	3.1	3:34	FL409	-50.5	3.2	2:50
NRT-SFO	2/20/79	90	7:49	-67	FL390	5:15	42.6N	154.6W	FL387	-54.7	5.5	FL390	-50.1	2.4	2:57	FL410	-58.6	6.7	3:22
NRT-SFO	2/26/79	87	7:49	-66	FL410	6:29	41.1N	140.2W	FL384	-53.3	5.7	FL370	-56.8	6.5	3:26	FL390	-53.2	6.3	1:45
NRT-SFO	3/ 1/79	89	7:46	-66	FL410	6:21	40.8N	138.8W	FL389	-51.3	7.5	FL369	-47.3	1.1	1:15				
NRT-SFO	4/ 4/79	86	8:53	-71	FL411	6:26	42.8N	148.3W	FL393	-59.8	5.6	FL410	-51.7	6.8	4:04	FL409	-48.9	3.1	5:15
NRT-SFO	4/ 7/79	94	7:46	-71	FL410	6:41	42.6N	134.9W	FL399	-58.9	6.4	FL389	-48.8	1.0	1:22	FL390	-50.5	1.8	1:30
NRT-SFO	4/17/79	90	7:49	-66	FL410	5:24	44.3N	151.8W	FL395	-57.6	4.7	FL369	-53.0	2.1	1:04				
NRT-SFO	4/23/79	99	8:15	-65	FL410	5:21	39.6N	155.3W	FL394	-57.2	4.4	FL409	-54.9	4.0	3:48	FL410	-53.8	6.9	6:45
NRT-SFO	4/28/79	95	7:42	-65	FL390	4:27	44.1N	160.0W	FL382	-55.5	4.4	FL390	-54.9	2.1	2:20	FL410	-61.9	10.1	4:24
NRT-SFO	5/ 1/79	91	8:59	-71	FL410	3:08	43.6N	175.0E	FL408	-57.7	7.4	FL369	-55.4	1.0	1:05	FL389	-58.9	2.9	2:05
NRT-SFO	5/ 8/79	87	7:41	-67	FL410	6:26	45.1N	137.2W	FL403	-58.0	6.3	FL409	-54.8	5.3	4:29	FL389	-57.1	4.9	3:14
NRT-SFO	6/10/79	98	8:24	-65	FL390	5:19	43.1N	157.3W	FL382	-55.7	5.8	FL370	-50.1	3.2	1:54	FL389	-51.2	2.8	1:54
NRT-SFO	6/13/78	90	7:44	-65	FL390	5:24	44.0N	149.9W	FL383	-56.5	5.9	FL410	-62.0	2.5	2:00	FL389	-48.0	1.7	2:30
NRT-SFO	6/18/78	96	8:09	-67	FL411	6:24	43.6N	142.6W	FL380	-54.3	7.8	FL369	-44.0	1.8	1:52	FL389	-57.5	2.5	3:31
NRT-SFO	6/25/78	96	8:14	-65	FL411	5:30	49.1N	151.6W	FL382	-56.1	5.7	FL409	-59.7	5.0	2:55	FL389	-57.4	9.1	4:28
												FL370	-59.4	1.0	1:34				
												FL410	-63.1	6.4	3:31				
												FL390	-56.2	4.8	2:39	FL409	-61.0	6.5	4:21
												FL369	-57.9	3.7	2:14	FL410	-57.8	4.6	5:09
												FL390	-57.1	2.6	3:25	FL410	-57.6	4.9	3:29
												FL369	-54.8	2.6	3:05	FL390	-59.5	3.0	1:04
												FL409	-56.5	3.9	1:55				
												FL390	-62.3	.6	1:05				
												FL429	-58.2	1.8	2:03				
												FL389	-62.1	1.6	1:56	FL410	-57.3	6.1	5:25
												FL370	-52.0	1.3	2:20	FL390	-58.0	4.9	5:39
												FL371	-51.2	2.5	2:19	FL390	-59.4	3.9	5:04
												FL370	-52.4	1.8	2:54	FL391	-60.1	3.6	2:05
												FL410	-59.1	3.6	1:40				
												FL371	-54.0	2.2	5:09	FL410	-62.0	3.6	2:34

APPENDIX B  
FLIGHT SUMMARY

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-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
NRT-SFO	6/27/79	98	8:09	-67	FL410	4:49	48.0N	159.9W	FL396	-56.7	6.9	FL390	-58.2	3.3	2:45	FL410	-58.6	7.0	4:00
NRT-SFO	6/30/78	93	8:04	-63	FL390	5:15	49.5N	153.1W	FL381	-54.3	5.1	FL370	-53.2	.9	3:14	FL390	-55.8	4.8	4:30
NRT-SFO	7/ 8/78	98	8:04	-64	FL410	6:24	45.4N	141.0W	FL390	-51.7	6.1	FL370	-47.7	.9	2:30	FL390	-48.7	3.8	2:19
NRT-SFO	7/14/78	103	8:29	-60	FL391	3:29	48.9N	178.4E	FL382	-53.4	4.4	FL410	-58.7	2.6	2:49	FL390	-54.6	4.1	5:24
NRT-SFO	7/20/78	97	7:58	-61	FL410	7:13	42.3N	130.6W	FL389	-51.9	4.8	FL370	-52.3	.6	2:45	FL390	-52.5	3.3	3:25
NRT-SFO	7/26/78	97	7:59	-63	FL391	4:39	48.2N	161.1W	FL394	-54.7	4.5	FL370	-48.0	.5	1:59	FL390	-58.0	5.9	3:09
NRT-SFO	8/ 1/78	101	8:19	-63	FL391	4:54	48.3N	162.4W	FL387	-53.6	6.9	FL410	-56.1	2.7	2:09	FL410	-53.5	1.9	2:30
NRT-SFO	8/ 7/78	97	8:04	-58	FL390	6:09	45.5N	141.9W	FL380	-50.1	4.4	FL390	-57.0	3.9	4:19	FL390	-52.4	3.8	4:30
NRT-SFO	8/12/78	94	7:44	-64	FL410	7:39	39.1N	124.5W	FL387	-53.1	6.2	FL370	-47.8	1.7	3:14	FL390	-54.6	5.2	2:04
NRT-SFO	8/30/78	90	7:39	-58	FL410	6:30	43.8N	135.6W	FL393	-51.3	3.3	FL410	-59.2	4.2	2:15	FL390	-50.2	1.3	1:54
NRT-SFO	9/ 2/78	90	7:39	-58	FL391	6:44	41.5N	132.1W	FL375	-49.3	5.2	FL370	-50.2	1.3	1:54	FL391	-51.2	4.6	2:44
NRT-SFO	9/ 9/78	88	7:24	-61	FL411	4:09	48.6N	165.4W	FL390	-52.8	6.0	FL371	-49.4	2.1	1:54	FL391	-51.5	4.8	1:19
NRT-SFO	9/25/78	92	7:51	-67	FL411	4:56	43.3N	155.8W	FL392	-53.8	7.3	FL410	-57.5	1.9	3:19	FL411	-56.8	5.7	5:19
NRT-SFO	9/29/78	92	7:49	-61	FL392	0:54	38.6N	152.3E	FL396	-56.0	4.3	FL370	-51.9	.6	1:37	FL411	-57.4	2.8	3:08
NRT-SFO	10/ 5/78	93	7:54	-64	FL410	6:09	41.6N	142.4W	FL389	-52.0	5.8	FL391	-56.0	3.2	3:39	FL409	-56.2	4.6	4:05
NRT-SFO	10/15/78	88	7:24	-63	FL411	6:19	40.1N	135.9W	FL391	-53.4	4.3	FL369	-48.2	1.5	3:34	FL390	-52.4	3.8	3:15
NRT-SFO	10/20/78	87	7:34	-61	FL390	7:29	38.8N	124.0W	FL380	-52.4	4.6	FL370	-51.0	.9	1:34	FL391	-54.9	3.8	2:34
NRT-SFO	10/26/78	97	7:59	-61	FL351	2:44	43.5N	174.5E	FL366	-52.9	5.0	FL411	-57.5	2.7	2:15	FL369	-49.5	3.1	3:15
NRT-SFO	11/27/78	91	7:41	-69	FL410	7:00	39.2N	132.2W	FL391	-51.7	7.7	FL390	-55.6	2.6	1:10	FL311	-48.0	3.2	2:27
NRT-SFO	12/ 3/78	89	7:30	-60	FL370	2:50	47.0N	179.7E	FL371	-50.5	5.1	FL410	-54.2	2.8	3:45	FL350	-51.7	.7	1:37
NRT-SFO	12/10/78	91	7:44	-67	FL370	1:45	42.6N	162.8E	FL387	-57.6	5.7	FL369	-45.7	2.1	3:00	FL390	-47.9	3.0	2:53
NRT-SFO	12/15/78	93	7:36	-67	FL358	2:31	47.1N	170.8E	FL375	-59.3	6.2	FL369	-63.0	2.5	2:14	FL369	-63.0	2.5	2:14
NRT-SFO	12/24/78	69	5:51	-64	FL410	5:36	50.5N	147.2W	FL377	-55.5	4.6	FL409	-58.7	5.5	2:00	FL409	-58.7	5.5	2:00
OKA-GUM	4/16/78	21	1:45	-50	FL370	0:00	23.8N	131.0E	FL369	-47.9	1.4	FL330	-54.4	6.2	2:22	FL390	-62.4	1.7	1:49
OKA-GUM	4/26/78	23	1:55	-54	FL390	0:10	23.9N	131.1E	FL378	-49.9	2.7	FL409	-62.4	1.9	3:00	FL330	-49.1	1.0	1:19
OKA-GUM	6/ 1/77	26	2:04	-49	FL370	1:49	15.7N	142.0E	FL362	-45.3	6.5	FL410	-58.2	3.2	2:15	FL410	-58.2	3.2	2:15
OKA-GUM	7/21/78	29	2:11	-48	FL369	0:54	21.0N	135.0E	FL364	-45.4	5.0	FL370	-47.7	.8	1:45	FL370	-47.7	.8	1:45
OKA-GUM	7/23/78	29	2:04	-55	FL391	1:58	15.1N	142.8E	FL371	-47.6	4.3	FL369	-46.9	1.1	1:56	FL370	-47.1	.8	1:23
OKA-GUM	8/23/78	23	1:58	-56	FL370	0:09	23.8N	131.0E	FL368	-54.4	3.2	FL370	-55.1	1.0	1:48	FL370	-55.1	1.0	1:48
OKA-HKG	2/10/79	20	1:34	-38	FL309	0:03	25.5N	126.3E	FL306	-34.2	2.1	FL309	-34.6	1.2	1:30	FL309	-34.6	1.2	1:30
OKA-HKG	4/10/79	19	1:34	-56	FL389	0:30	23.5N	123.3E	FL374	-51.5	5.5	FL310	-36.9	1.9	1:30	FL310	-36.9	1.9	1:30
OKA-HKG	12/11/78	19	1:34	-39	FL310	0:00	25.2N	126.8E	FL309	-36.6	2.2	FL430	-63.1	.8	1:25	FL430	-63.1	.8	1:25
OKA-HKG	12/25/78	21	1:38	-64	FL430	0:45	22.7N	122.0E	FL419	-60.4	7.9	FL390	-63.8	1.5	1:55	FL390	-63.8	1.5	1:55
OMH-LAX	12/ 8/76	26	2:10	-66	FL390	0:15	40.2N	99.7W	FL385	-63.0	3.5	FL349	-53.0	3.1	2:49	FL349	-53.0	3.1	2:49
ORD-ACA	3/27/78	35	2:59	-57	FL349	0:49	34.1N	92.2W	FL347	-52.8	3.1	FL390	-52.4	2.4	1:04	FL390	-52.4	2.4	1:04
ORD-DEN	1/17/79	21	1:39	-64	FL390	1:34	40.8N	102.5W	FL391	-57.0	3.5	FL381	-53.3	3.3					
ORD-DEN	2/22/78	17	1:19	-63	FL367	1:19	40.7N	103.0W	FL383	-53.3	3.3	FL368	-56.5	5.6					
ORD-DEN	3/ 8/78	16	1:19	-64	FL391	1:00	41.1N	100.0W	FL368	-56.5	5.6	FL380	-48.9	1.9					
ORD-DEN	3/13/79	50	1:15	-55	FL351	0:03	41.9N	90.2W	FL380	-48.9	1.9	FL381	-53.3	7.0					
ORD-DEN	3/29/79	19	1:14	-59	FL390	0:27	41.6N	94.5W	FL381	-53.3	7.0								











APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
ORD-SFO	10/14/78	35	2:49	-62	FL387	1:30	40.5N	106.8W	FL364	-55.2	4.2	FL349	-53.8	2.0	1:05	FL389	-58.4	2.1	1:14
ORD-SFO	10/17/78	38	3:04	-62	FL390	1:59	40.2N	109.5W	FL360	-55.4	3.8	FL349	-54.5	1.7	1:45				
ORD-SFO	10/18/78	140	3:33	-62	FL389	1:31	44.0N	105.5W	FL382	-56.8	3.7	FL389	-57.6	2.8	1:55				
ORD-SFO	10/26/78	36	2:58	-55	FL389	1:23	41.1N	103.9W	FL375	-50.3	4.8	FL389	-53.0	1.3	2:08				
ORD-SFO	11/27/76	35	3:09	-65	FL390	3:00	38.6N	119.0W	FL381	-50.1	6.5	FL389	-50.3	6.2	2:40				
ORD-SFO	12/ 8/78	40	3:16	-60	FL390	3:12	38.3N	119.7W	FL385	-51.6	5.2	FL390	-52.0	4.5	2:57				
ORD-SFO	12/ 9/78	39	3:09	-62	FL365	3:09	37.7N	120.3W	FL384	-52.6	4.9	FL389	-53.2	3.6	2:49				
ORD-SFO	12/15/76	35	3:01	-67	FL390	2:09	40.0N	111.6W	FL382	-57.7	6.7	FL390	-59.4	6.0	2:26				
ORD-SFO	12/17/77	38	3:16	-51	FL400	3:00	38.6N	118.4W	FL382	-44.7	4.6	FL398	-48.4	1.6	1:34				
ORD-SFO	12/31/77	39	3:15	-56	FL341	0:10	42.0N	91.3W	FL383	-49.6	2.2	FL390	-49.5	1.9	2:54				
CRY-BAH	5/30/77	55	4:50	-55	FL331	0:09	47.7N	8.3E	FL330	-51.3	2.4	FL331	-51.5	2.1	4:35				
ORY-BEG	3/17/77	14	1:05	-63	FL370	0:50	46.5N	14.9E	FL364	-60.4	4.0	FL369	-61.5	.6	1:01				
ORY-BEG	8/19/76	15	1:09	-54	FL331	0:29	47.8N	10.7E	FL328	-52.5	2.7	FL330	-53.1	.8	1:04				
ORY-BEG	10/ 7/76	12	1:09	-57	FL370	0:10	47.7N	6.8E	FL359	-53.9	6.3								
ORY-DAM	1/ 2/78	40	3:24	-60	FL330	0:09	46.4N	5.3E	FL297	-46.3	4.8	FL290	-44.1	1.3	2:35				
ORY-DAM	10/17/77	37	3:14	-56	FL331	1:45	38.4N	21.1E	FL325	-51.2	4.4	FL330	-53.5	1.6	2:09				
ORY-DAM	11/ 7/77	38	3:20	-55	FL330	0:39	43.9N	11.6E	FL325	-49.9	3.9	FL329	-51.2	2.2	2:55				
ORY-DAM	12/12/77	41	3:18	-55	FL311	2:18	35.7N	25.6E	FL309	-49.0	4.0	FL330	-51.4	1.4	1:15				
OSA-HNL	1/ 3/79	66	5:30	-48	FL330	0:25	34.7N	142.1E	FL345	-41.4	2.9	FL349	-41.2	1.6	4:49				
OSA-HNL	2/12/79	67	5:41	-59	FL370	0:15	34.5N	140.7E	FL378	-50.4	3.8	FL370	-53.1	1.9	2:34	FL390	-47.9	2.8	2:41
OSA-HNL	2/21/79	316	5:38	-57	FL370	2:15	32.3N	164.2E	FL370	-52.5	3.8	FL370	-52.6	3.8	5:23				
OSA-HNL	4/ 1/79	74	6:04	-53	FL351	3:24	30.8N	176.3E	FL340	-49.7	2.6	FL331	-47.9	1.4	3:04	FL351	-52.1	.6	2:39
OSA-HNL	5/ 8/79	78	6:24	-58	FL370	3:24	32.4N	174.4E	FL363	-51.7	5.2	FL370	-53.5	3.7	4:54				
OSA-HNL	10/28/78	81	6:25	-67	FL390	3:55	34.4N	178.9W	FL364	-54.7	9.0	FL330	-43.9	1.0	1:18	FL370	-58.5	1.5	2:11
OSA-HNL	11/ 7/78	75	6:15	-58	FL390	5:39	23.9N	164.7W	FL364	-46.7	7.6	FL390	-61.1	3.2	2:19				
PDX-HNL	5/18/78	50	4:21	-53	FL350	3:21	28.9N	152.0W	FL326	-47.2	2.7	FL329	-36.9	.9	1:04	FL349	-42.1	.7	1:59
PDX-HNL	6/ 2/78	51	4:30	-58	FL370	0:45	41.5N	131.0W	FL365	-55.3	3.8	FL390	-54.4	2.4	2:45	FL330	-49.1	1.0	1:05
PDX-HNL	6/21/78	46	3:45	-47	FL310	0:09	43.4N	126.4W	FL310	-45.2	1.2	FL310	-45.4	1.0	3:39				
PDX-HNL	7/ 5/78	46	4:18	-55	FL350	0:39	41.5N	131.4W	FL348	-51.5	2.9	FL350	-52.0	2.2	4:04				
PDX-HNL	10/26/78	52	4:24	-51	FL350	3:34	27.3N	152.3W	FL331	-44.8	4.8	FL310	-40.2	.6	1:50	FL349	-49.2	1.5	2:15
PDX-HNL	10/27/78	52	4:39	-60	FL390	3:19	28.8N	148.8W	FL360	-51.5	4.4	FL350	-49.6	1.3	2:45	FL390	-57.0	1.2	1:20
PER-BKK	8/15/77	62	5:14	-45	FL351	3:30	1.9S	104.5E	FL335	-38.7	5.1	FL350	-42.8	1.1	3:09	FL310	-32.5	.8	1:03
PER-BOM	12/26/77	65	5:24	-43	FL351	3:34	2.1S	104.4E	FL330	-38.7	4.3	FL309	-35.1	3.5	2:30	FL350	-42.4	.5	2:34
PER-BOM	1/ 7/77	86	7:24	-46	FL350	7:14	16.3N	73.9E	FL325	-38.0	5.9	FL285	-30.1	1.9	1:34	FL319	-34.9	.6	1:25
PER-BOM	1/23/77	83	7:22	-46	FL351	4:39	.3S	86.4E	FL332	-40.2	3.9	FL350	-44.3	.6	2:55				
PER-BOM	4/ 3/77	89	7:34	-43	FL350	3:59	6.0S	91.7E	FL330	-38.8	3.6	FL320	-37.4	2.4	4:14	FL350	-44.4	1.0	2:52
PER-BOM	4/ 6/77	88	7:29	-44	FL350	7:04	14.8N	75.1E	FL321	-35.9	4.4	FL320	-36.1	1.7	2:30	FL349	-42.0	.6	3:44
PER-BOM	4/24/77	86	7:33	-44	FL351	6:53	12.5N	76.2E	FL325	-38.7	3.3	FL285	-31.7	2.0	1:19	FL320	-34.9	1.5	2:14
PER-BOM	5/ 3/77	90	7:20	-44	FL320	0:09	29.3S	112.3E	FL333	-38.9	3.4	FL349	-41.6	1.1	2:25				
PER-BOM	6/24/77	86	7:29	-44	FL351	6:29	10.5N	77.4E	FL311	-34.3	3.9	FL285	-35.4	1.1	1:09	FL320	-37.7	2.4	2:33
PER-BOM	7/ 3/77	86	7:21	-44	FL350	4:33	1.5S	87.4E	FL328	-38.1	3.7	FL350	-42.2	.5	2:39				
PER-BOM	7/13/76	90	7:40	-48	FL316	0:10	29.7S	112.8E	FL332	-40.8	2.9	FL319	-37.1	3.8	3:43	FL349	-41.0	.6	3:22
PER-BOM	7/20/77	28	1:58	-42	FL321	0:04	30.1S	113.2E	FL319	-36.8	3.0	FL285	-30.1	1.2	1:48	FL320	-36.4	.5	2:15
PER-BOM	7/27/77	89	7:29	-44	FL351	4:54	.6S	86.6E	FL325	-37.6	3.9	FL310	-33.4	.5	1:41				
												FL284	-33.9	3.0	1:05	FL319	-35.7	.5	2:44
												FL350	-41.7	1.2	3:11				
												FL319	-38.6	2.1	3:18	FL350	-42.9	1.5	3:26
												FL320	-36.7	3.0	0:00				
												FL285	-33.5	3.2	1:09	FL320	-35.5	.5	3:24
												FL350	-42.3	1.5	2:34				



# APPENDIX B FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
PER-BOM	8/ 3/76	93	7:39		-44	FL351	4:39	2.9S	88.6E	FL327	-39.0	3.0	FL320	-38.6	.8	1:05	FL320	-35.7	.7	1:39
PER-BOM	8/ 6/76	91	7:33		-44	FL350	6:03	6.8N	80.3E	FL306	-33.3	4.5	FL350	-42.1	1.4	2:54	FL319	-37.0	.5	2:54
PER-BOM	8/ 9/77	85	7:19		-45	FL350	5:09	2.2N	84.2E	FL324	-36.9	6.1	FL284	-28.6	1.1	2:48	FL320	-35.7	.5	2:10
PER-BOM	9/ 2/77	84	7:08		-44	FL351	4:48	1.1N	85.2E	FL324	-36.6	4.6	FL309	-32.8	.5	1:09	FL320	-35.7	.5	2:10
PER-BOM	9/26/76	92	7:36		-47	FL360	4:25	3.3S	88.1E	FL342	-41.0	3.4	FL286	-28.3	1.6	1:40	FL320	-35.7	.5	2:10
PER-BOM	10/10/76	90	7:30		-47	FL303	0:04	30.3S	113.4E	FL336	-40.2	3.7	FL350	-43.1	1.2	3:05	FL320	-34.5	.6	3:09
PER-BOM	10/15/76	94	7:47		-44	FL350	4:24	5.1S	90.6E	FL337	-40.0	3.2	FL286	-31.9	4.1	1:14	FL351	-42.7	1.0	2:43
PER-BOM	10/23/77	91	7:36		-46	FL361	3:54	6.5S	91.8E	FL336	-40.1	4.2	FL330	-36.1	1.8	1:04	FL350	-43.0	.7	3:12
PER-BOM	11/14/76	92	7:58		-48	FL320	0:09	30.1S	113.2E	FL331	-39.3	7.0	FL320	-36.5	.8	3:15	FL350	-42.6	.5	4:12
PER-BOM	11/20/77	89	7:24		-46	FL361	3:19	10.2S	95.0E	FL339	-41.5	3.8	FL320	-38.7	4.3	3:33	FL350	-41.1	2.5	2:46
PER-BOM	12/ 2/77	84	7:19		-47	FL350	7:19	17.3N	73.5E	FL328	-38.6	4.8	FL319	-37.4	3.1	3:00	FL360	-46.0	.6	2:03
PER-BOM	12/ 9/76	88	7:24		-44	FL350	6:19	9.8N	78.0E	FL326	-38.2	3.1	FL349	-42.9	.5	1:15	FL360	-45.4	.5	1:39
PER-BOM	12/28/76	90	7:30		-45	FL350	6:11	8.3N	79.1E	FL336	-40.4	3.6	FL351	-42.9	.5	2:19	FL350	-43.8	1.2	3:09
PER-MEL	1/29/77	29	2:24		-54	FL370	2:24	37.7S	142.4E	FL364	-49.9	5.1	FL319	-36.2	1.0	1:45	FL340	-40.8	.5	1:24
PER-MEL	2/ 5/77	27	2:18		-58	FL370	1:08	35.4S	129.7E	FL350	-52.9	5.9	FL319	-36.9	2.2	3:19	FL350	-43.3	.5	3:49
PER-MEL	2/19/77	29	2:19		-53	FL370	2:09	37.7S	140.5E	FL366	-46.6	4.3	FL369	-51.4	1.2	2:09				
PER-MEL	3/26/77	28	2:19		-51	FL371	1:24	36.1S	133.0E	FL366	-46.6	4.2	FL370	-47.5	2.3	2:09				
PER-MEL	4/ 5/77	27	2:14		-58	FL370	2:04	37.6S	140.6E	FL365	-54.6	4.3	FL370	-47.7	2.2	1:59				
PER-MEL	4/26/77	29	2:19		-52	FL330	1:24	36.1S	132.8E	FL327	-49.1	3.7	FL369	-55.5	1.1	2:00				
PER-MEL	5/ 5/77	32	2:33		-59	FL371	0:30	33.9S	122.9E	FL359	-53.6	6.7	FL329	-50.0	1.2	2:09				
PER-MEL	6/18/77	25	2:34		-60	FL371	0:49	34.5S	125.7E	FL363	-56.1	4.6	FL370	-55.9	3.3	2:14				
PER-MEL	7/ 5/77	28	2:23		-60	FL371	1:48	37.3S	137.3E	FL359	-52.9	6.5	FL370	-57.0	3.2	2:14				
PER-MEL	7/22/77	25	2:14		-55	FL353	2:14	37.8S	142.5E	FL365	-47.7	3.5	FL370	-55.5	3.1	1:53				
PER-MEL	7/25/77	31	2:30		-59	FL330	1:55	36.9S	136.9E	FL327	-53.1	6.2	FL371	-47.5	3.0	1:56				
PER-MEL	7/29/77	25	2:19		-58	FL370	1:49	37.0S	137.2E	FL363	-53.4	4.0	FL330	-54.2	4.8	2:15				
PER-MEL	8/11/77	26	2:08		-48	FL370	1:05	35.6S	130.8E	FL331	-44.3	2.4	FL370	-54.6	2.2	1:59				
PER-MEL	9/ 4/77	27	2:24		-51	FL321	0:05	32.9S	118.7E	FL349	-43.6	3.2	FL370	-42.8	2.5	1:15				
PER-MEL	10/25/77	30	2:29		-59	FL371	2:15	37.6S	140.0E	FL365	-54.9	4.9	FL370	-56.1	1.7	2:09				
PER-MEL	11/14/77	25	2:19		-59	FL370	1:29	36.3S	134.1E	FL367	-56.4	2.7	FL370	-57.0	1.5	2:04				
PER-MEL	11/22/77	29	2:29		-54	FL370	0:10	33.0S	119.5E	FL365	-50.6	3.0	FL370	-51.3	1.1	2:14				
PER-MEL	12/ 4/77	29	2:24		-49	FL330	1:44	36.6S	135.6E	FL327	-46.9	3.3	FL330	-47.8	.8	2:04				
PER-MRU	1/27/77	69	5:39		-30	FL267	1:45	30.6S	96.1E	FL267	-26.8	1.7	FL266	-26.8	1.7	5:39				
PER-MRU	2/ 3/77	70	5:54		-33	FL291	4:44	24.8S	69.4E	FL276	-28.8	2.3	FL266	-27.1	.8	3:34	FL291	-31.4	1.1	2:15
PER-MRU	2/17/77	74	6:03		-45	FL360	5:43	22.4S	62.3E	FL332	-38.0	4.8	FL320	-35.4	1.1	2:34	FL360	-43.4	.7	2:19
PER-MRU	3/24/77	63	5:30		-43	FL320	0:39	31.5S	104.6E	FL319	-38.8	2.6	FL320	-39.1	1.9	5:05				
PER-SYD	1/ 9/77	37	2:59		-54	FL370	2:34	34.6S	145.4E	FL364	-48.4	3.8	FL369	-49.5	1.6	2:40				
PER-SYD	1/18/77	32	2:39		-52	FL371	0:45	33.9S	127.9E	FL360	-47.3	4.9	FL370	-50.0	1.1	2:00				
PER-SYD	1/25/77	34	2:44		-50	FL371	2:24	34.8S	145.6E	FL365	-44.9	3.7	FL370	-45.5	2.6	2:24				
PER-SYD	4/ 8/77	39	3:15		-56	FL371	0:10	33.1S	119.4E	FL368	-52.7	3.8	FL371	-53.3	2.8	2:59				
PER-SYD	6/26/77	28	2:34		-41	FL317	0:10	33.6S	121.5E	FL292	-38.5	1.5	FL291	-38.3	1.5	2:15				
PER-SYD	8/ 5/76	33	2:48		-54	FL370	2:42	34.6S	148.1E	FL359	-48.2	3.2	FL369	-47.9	2.6	2:12				
PER-SYD	8/ 8/76	32	2:34		-48	FL370	1:29	34.5S	136.6E	FL362	-44.9	3.6	FL370	-46.0	1.4	2:14				
PER-SYD	9/28/76	37	3:10		-63	FL370	2:25	35.0S	141.8E	FL371	-55.9	5.6	FL379	-56.3	3.7	1:01				
PER-SYD	10/12/76	36	3:07		-53	FL330	0:15	33.4S	120.7E	FL340	-49.3	2.8								
PER-SYD	10/17/76	35	2:48		-56	FL360	0:57	33.9S	130.0E	FL361	-52.3	2.7	FL369	-51.8	1.7	1:30				
PER-SYD	11/16/76	33	2:39		-51	FL330	1:34	34.7S	137.7E	FL328	-48.4	2.1	FL330	-48.6	2.1	2:24				
PER-SYD	11/23/76	36	2:59		-61	FL370	2:34	34.8S	144.6E	FL349	-53.1	5.2	FL329	-50.0	1.8	1:19	FL369	-56.8	4.0	1:24



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
PPT-PPG	5/ 3/77	28	2:20	-65	FL430	0:10	17.3S	152.1W	FL425	-63.8	5.1	FL429	-65.0	.2	2:09				
PPT-PPG	5/10/77	30	2:26	-67	FL429	0:10	17.2S	152.2W	FL421	-64.0	8.1	FL429	-66.4	.7	2:10				
PPT-PPG	5/14/79	33	2:14	-58	FL396	0:57	16.4S	158.6W	FL387	-54.2	5.8	FL392	-55.4	1.6	1:03				
PPT-PPG	5/17/77	12	2:18	-67	FL430	0:20	17.0S	153.9W	FL408	-60.1	12.3	FL429	-65.5	1.2	1:22				
PPT-PPG	8/25/76	28	2:14	-47	FL350	0:09	17.3S	152.6W	FL345	-43.7	4.0	FL349	-44.8	1.3	2:00				
PPT-PPG	10/23/78	29	2:20	-59	FL390	1:15	16.1S	161.0W	FL382	-55.2	6.5	FL390	-57.4	.7	2:00				
PPT-PPG	12/12/77	29	2:30	-54	FL391	0:15	17.1S	153.1W	FL380	-50.9	7.4	FL390	-53.4	.5	2:10				
PPT-PPG	12/14/76	29	2:20	-65	FL430	0:10	17.1S	152.2W	FL425	-62.6	5.2	FL429	-63.7	.6	2:09				
PPT-PPG	12/21/76	30	2:20	-67	FL430	0:45	16.7S	156.9W	FL421	-63.6	8.0	FL430	-65.9	.9	2:07				
PPT-PPG	12/28/76	29	2:24	-67	FL430	0:45	16.7S	156.8W	FL424	-64.7	5.5	FL430	-66.3	.5	2:10				
PTY-GIG	1/20/78	62	5:14	-53	FL371	4:54	19.7S	45.6W	FL355	-47.0	6.2	FL330	-40.1	.7	1:30	FL370	-51.2	.8	3:19
PTY-GIG	1/26/79	140	5:28	-51	FL371	5:20	20.3S	45.3W	FL350	-43.3	6.1	FL330	-37.8	.5	2:15	FL370	-49.0	.7	2:50
PTY-GIG	3/28/79	65	5:06	-49	FL371	2:24	5.5S	61.3W	FL353	-43.6	5.5	FL331	-38.0	.5	1:52	FL370	-48.2	.4	0:00
PTY-GIG	4/11/79	65	5:13	-50	FL371	4:38	17.3S	47.1W	FL334	-38.0	7.4	FL331	-36.8	.9	3:00	FL370	-49.3	.5	1:10
PTY-GIG	5/ 4/79	67	5:29	-52	FL371	5:24	20.9S	44.8W	FL364	-46.7	5.3	FL370	-48.6	1.4	4:44				
PTY-GIG	5/13/75	76	5:43	-53	FL369	5:13	18.6S	46.4W	FL363	-50.0	5.5	FL369	-51.8	1.3	4:58				
PTY-GIG	6/ 9/78	70	5:40	-52	FL370	4:10	11.5S	52.7W	FL354	-46.2	6.2	FL330	-40.0	0.0	1:45				
PTY-GIG	8/25/78	63	5:24	-59	FL370	5:09	19.4S	45.7W	FL354	-51.8	6.3	FL330	-44.7	.4	1:54	FL370	-50.5	.8	3:35
PTY-GUA	3/29/79	16	1:15	-45	FL350	0:35	11.4N	85.1W	FL341	-42.2	5.7					FL370	-56.9	1.0	2:54
PTY-GUA	4/12/79	14	1:04	-44	FL351	0:40	12.4N	86.5W	FL342	-40.7	5.1								
PTY-GUA	5/ 9/75	14	1:10	-47	FL350	0:45	12.5N	86.9W	FL340	-43.6	6.3								
PTY-GUA	8/10/78	15	1:10	-46	FL350	0:25	11.1N	84.2W	FL338	-42.1	5.8								
PTY-GUA	8/21/78	14	1:04	-52	FL351	0:25	10.9N	84.3W	FL341	-49.0	6.2								
PTY-GUA	9/ 4/76	14	1:05	-44	FL350	0:15	10.5N	83.8W	FL339	-40.6	6.5								
PTY-MIQ	3/30/75	15	1:08	-52	FL369	0:59	10.6N	69.4W	FL361	-49.0	5.4								
SEA-FAI	4/17/78	25	2:15	-56	FL317	0:05	49.3N	124.7W	FL343	-49.1	2.8	FL349	-49.0	2.5	1:59				
SEA-FAI	5/11/77	28	2:14	-49	FL343	0:09	49.7N	125.7W	FL355	-44.6	2.4	FL370	-42.8	.5	1:10				
SEA-FAI	5/18/78	19	1:30	-57	FL350	0:20	50.6N	126.9W	FL344	-53.3	5.0	FL349	-55.1	2.2	1:15				
SEA-FAI	6/ 2/78	29	2:19	-57	FL350	0:25	51.9N	126.7W	FL345	-54.3	4.3	FL350	-55.6	1.7	2:00				
SEA-FAI	6/ 3/77	27	2:07	-59	FL350	1:47	61.5N	140.0W	FL348	-50.8	4.2	FL349	-50.8	4.3	2:02				
SEA-FAI	6/ 6/77	24	2:04	-52	FL351	0:15	51.6N	126.0W	FL349	-48.5	2.6	FL350	-48.8	2.2	1:54				
SEA-FAI	6/20/77	28	2:15	-55	FL329	2:15	63.8N	145.2W	FL345	-48.3	3.2	FL350	-48.7	1.3	2:00				
SEA-FAI	6/21/78	31	2:30	-55	FL350	0:20	51.6N	126.8W	FL346	-49.5	4.2	FL350	-49.9	4.2	2:14				
SEA-FAI	7/ 5/78	28	2:14	-55	FL350	0:04	49.4N	125.0W	FL347	-51.4	3.4	FL350	-52.2	1.2	2:04				
SEA-FAI	7/ 7/77	27	2:25	-57	FL350	0:35	52.5N	128.0W	FL347	-54.5	4.0	FL350	-55.2	2.1	2:05				
SEA-FAI	7/17/77	27	2:19	-54	FL315	2:19	64.0N	145.7W	FL357	-46.1	4.3	FL370	-48.3	2.1	1:17				
SEA-FAI	11/15/76	31	2:26	-51	FL349	2:20	63.5N	144.7W	FL344	-39.5	4.4	FL348	-39.5	4.2	2:10				
SEA-FAI	12/ 6/76	30	2:30	-61	FL350	0:15	50.5N	126.6W	FL346	-57.3	3.8	FL350	-58.0	2.9	2:14				
SEA-FAI	12/13/77	29	2:24	-57	FL350	1:04	55.8N	131.2W	FL343	-53.0	3.8	FL350	-53.6	2.9	2:04				
SEA-HND	8/ 8/77	95	8:33	-62	FL391	1:03	50.2N	137.7W	FL391	-53.4	9.5	FL390	-49.3	7.0	2:41	FL410	-60.4	.9	2:30
												FL430	-60.4	1.2	1:32				
SEA-HNL	2/21/78	47	3:30	-51	FL331	2:49	32.6N	144.2W	FL314	-46.9	2.3	FL309	-45.9	.6	2:42				
SEA-HNL	3/30/76	44	3:54	-67	FL390	1:09	37.2N	139.8W	FL387	-63.9	4.1	FL389	-64.6	2.9	3:45				
SEA-HNL	3/31/76	53	4:39	-61	FL350	0:30	44.0N	128.2W	FL348	-57.5	2.4	FL350	-57.9	1.2	4:24				
SEA-HNL	4/ 1/76	54	4:25	-56	FL310	0:09	46.1N	125.6W	FL326	-51.9	2.4	FL331	-51.8	1.8	3:25				
SEA-HNL	4/ 2/76	55	4:39	-65	FL389	2:09	35.4N	140.9W	FL376	-61.1	4.7	FL370	-62.5	.9	1:35	FL388	-61.8	3.6	2:24
SEA-HNL	4/ 3/76	59	4:47	-64	FL383	0:10	46.1N	125.5W	FL377	-55.8	5.0	FL389	-54.5	4.1	1:49	FL367	-58.6	3.9	1:55
SEA-HNL	4/17/78	41	3:49	-59	FL350	2:09	39.2N	143.4W	FL330	-53.2	4.1	FL309	-49.6	1.5	1:50	FL350	-56.8	2.0	1:45
SEA-HNL	6/ 3/77	56	4:59	-60	FL391	1:39	38.1N	133.5W	FL377	-55.6	4.3	FL350	-51.2	.7	1:15	FL391	-58.2	1.3	3:19
SEA-HNL	6/ 6/77	49	4:39	-55	FL351	2:30	37.4N	145.4W	FL341	-48.8	4.4	FL350	-50.8	1.5	3:15				
SEA-HNL	6/21/77	54	4:30	-50	FL350	2:30	33.1N	143.2W	FL348	-48.5	3.0	FL349	-49.0	.6	4:19				
SEA-HNL	7/ 7/77	55	4:35	-62	FL411	3:30	28.7N	151.4W	FL376	-57.0	4.7	FL370	-57.3	.9	1:25				
SEA-HNL	7/18/77	54	4:34	-51	FL350	3:55	26.7N	154.0W	FL348	-47.6	2.1	FL350	-47.9	1.6	4:19				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SEA-HNL	11/15/76	59	5:04	-54	FL389	3:19	30.5N	146.3W	FL368	-49.5	4.0	FL350	-47.0	.9	1:34	FL388	-52.5	1.0	2:04
SEA-HNL	12/6/76	51	4:20	-58	FL350	0:09	45.7N	126.2W	FL348	-54.4	2.9	FL350	-54.8	1.6	4:10				
SEA-HNL	12/13/77	68	5:20	-59	FL390	1:45	38.9N	134.8W	FL373	-54.1	3.7	FL351	-53.0	2.6	1:29	FL390	-55.6	1.6	3:29
SEA-LAX	4/6/75	16	1:15	-51	FL368	0:05	44.9N	121.9W	FL387	-47.1	1.8								
SEA-LHR	1/24/78	98	8:14	-68	FL330	7:04	55.1N	18.3W	FL334	-56.1	6.8	FL330	-49.6	5.9	1:04	FL350	-52.4	4.1	2:25
												FL330	-60.0	1.7	1:15	FL330	-62.5	3.2	2:39
SEA-LHR	2/18/79	97	8:19	-68	FL331	2:30	65.2N	92.7W	FL339	-59.6	4.5	FL330	-61.9	2.9	4:04	FL370	-59.2	4.1	2:49
SEA-LHR	3/11/77	53	7:01	-61	FL330	1:30	59.8N	103.6W	FL341	-51.3	5.4	FL330	-57.6	2.8	2:02	FL370	-47.0	.9	2:17
SEA-LHR	3/15/78	100	8:30	-62	FL331	5:35	60.2N	41.6W	FL327	-52.4	4.3	FL330	-52.7	4.4	7:40				
SEA-LHR	3/20/75	101	7:35	-60	FL331	7:20	54.1N	4.5W	FL310	-47.5	4.1	FL329	-45.4	2.3	3:29	FL290	-47.3	2.1	3:07
SEA-LHR	3/22/78	87	7:35	-57	FL289	3:09	60.8N	77.3W	FL289	-48.7	3.1	FL289	-48.7	3.1	7:35				
SEA-LHR	3/25/76	89	7:35	-64	FL370	5:40	59.0N	29.1W	FL349	-56.2	4.3	FL331	-55.9	3.6	2:04	FL370	-57.8	4.0	3:26
SEA-LHR	3/26/79	91	7:29	-60	FL331	0:34	51.5N	113.1W	FL329	-51.1	3.8	FL331	-51.2	3.8	6:59				
SEA-LHR	4/5/79	98	8:04	-60	FL370	5:59	62.8N	28.7W	FL352	-53.3	3.8	FL331	-53.3	3.0	3:24	FL370	-53.5	4.3	4:19
SEA-LHR	4/29/76	91	7:50	-57	FL370	7:40	53.7N	2.9W	FL349	-50.8	3.4	FL330	-54.3	1.9	1:19	FL350	-47.1	1.0	2:15
												FL370	-52.0	3.0	2:54				
SEA-LHR	6/11/77	83	7:49	-60	FL370	0:15	48.9N	117.7W	FL397	-48.0	6.2	FL390	-43.3	3.4	2:24	FL410	-48.3	5.0	3:59
SEA-LHR	6/12/78	93	7:54	-58	FL370	7:29	56.1N	5.3W	FL344	-48.0	6.5	FL330	-45.5	5.5	4:34	FL370	-52.6	6.0	2:34
SEA-LHR	6/13/77	88	7:59	-57	FL369	0:05	48.7N	119.1W	FL391	-47.3	4.9	FL369	-53.7	1.9	1:34	FL390	-42.7	1.9	1:49
												FL410	-47.3	3.1	3:49				
SEA-LHR	6/18/77	96	7:59	-61	FL370	0:45	53.5N	116.2W	FL375	-50.4	5.3	FL370	-50.1	5.5	4:19	FL390	-50.5	4.6	2:39
SEA-LHR	6/20/77	81	7:41	-60	FL371	0:44	56.7N	112.6W	FL390	-50.0	4.9	FL370	-50.8	6.0	3:04	FL390	-46.4	1.7	1:09
												FL409	-50.3	3.8	3:04				
SEA-LHR	6/22/77	91	7:59	-56	FL390	1:19	58.5N	110.2W	FL394	-49.6	5.2	FL390	-49.4	3.9	2:34	FL409	-48.5	5.6	3:49
SEA-LHR	6/25/77	91	7:34	-57	FL370	1:15	58.5N	110.0W	FL394	-46.9	5.3	FL370	-54.1	1.7	1:54	FL390	-47.2	4.2	1:24
												FL409	-43.3	2.4	3:49				
SEA-LHR	6/27/77	93	7:45	-61	FL391	3:21	65.3N	76.6W	FL393	-47.7	4.6	FL369	-49.8	2.4	1:34	FL390	-49.3	5.8	2:26
												FL409	-45.4	2.6	3:24				
SEA-LHR	6/29/77	89	7:39	-57	FL371	0:10	48.9N	118.3W	FL395	-48.6	3.3	FL390	-46.9	1.4	2:44	FL410	-48.4	2.3	3:39
SEA-LHR	7/11/78	91	7:41	-58	FL370	6:51	58.1N	8.7W	FL323	-48.2	5.1	FL310	-42.6	1.4	1:01	FL329	-51.6	1.4	2:24
												FL291	-41.6	.9	1:04	FL330	-49.4	.5	1:04
SEA-LHR	9/3/77	89	8:08	-57	FL351	6:43	63.5N	15.4W	FL343	-49.0	4.3	FL330	-50.3	2.5	3:09	FL370	-46.8	4.2	2:19
												FL330	-51.4	1.7	1:20				
SEA-LHR	10/9/78	87	7:44	-57	FL330	5:49	64.2N	23.4W	FL330	-50.5	4.1	FL330	-50.6	4.0	7:33				
SEA-LHR	10/19/76	97	8:54	-60	FL349	2:11	63.4N	98.7W	FL360	-50.5	3.8	FL348	-56.8	1.5	1:18	FL369	-48.8	2.0	0:00
SEA-LHR	10/20/76	97	8:19	-54	FL350	2:34	59.6N	89.1W	FL355	-46.4	5.1	FL329	-51.2	1.4	1:39	FL349	-52.1	1.2	1:34
												FL369	-42.5	3.3	4:35				
SEA-LHR	10/21/78	85	7:18	-54	FL330	1:03	55.0N	105.9W	FL330	-48.5	3.8	FL330	-48.5	3.8	7:04				
SEA-LHR	12/7/77	96	8:02	-58	FL331	7:17	56.0N	10.1W	FL329	-51.5	3.2	FL330	-51.7	3.1	7:44				
SEA-LHR	12/9/77	93	8:01	-59	FL330	5:17	59.9N	38.8W	FL327	-52.1	4.9	FL330	-52.2	5.1	7:21				
SEA-LHR	12/15/76	92	8:09	-63	FL370	6:27	62.0N	20.3W	FL341	-53.4	4.9	FL309	-50.2	2.4	1:10	FL329	-53.0	3.4	3:25
												FL370	-56.0	4.9	3:07				
SEA-LHR	12/27/76	94	7:54	-66	FL370	4:20	66.7N	61.2W	FL359	-58.9	5.2	FL329	-54.7	4.5	1:54	FL369	-64.7	1.4	2:14
												FL389	-59.0	1.7	1:45				
SEA-ORD	2/13/79	25	2:00	-57	FL412	0:39	47.1N	108.9W	FL400	-52.3	3.9	FL411	-53.3	2.8	1:35				
SEA-ORD	3/29/77	37	2:42	-59	FL371	1:16	46.2N	105.8W	FL363	-49.9	6.2	FL370	-50.9	5.7	2:15				
SEA-ORD	4/1/77	30	2:24	-51	FL351	0:05	47.4N	119.1W	FL364	-48.3	1.3	FL369	-48.0	1.1	2:05				
SEA-ORD	4/9/77	33	2:33	-69	FL409	1:18	47.0N	103.9W	FL394	-61.4	7.5	FL409	-65.7	2.9	1:49				
SEA-ORD	4/12/75	24	2:24	-64	FL371	0:04	47.6N	118.7W	FL367	-57.1	3.8	FL370	-57.3	3.9	2:14				
SEA-ORD	4/29/76	31	2:29	-62	FL408	2:14	43.1N	93.6W	FL396	-54.6	3.5	FL409	-55.2	2.7	1:59				
SEA-ORD	4/29/77	30	2:24	-63	FL370	0:39	47.0N	111.7W	FL382	-57.2	3.6								
SEA-ORD	5/16/75	30	2:30	-64	FL403	1:30	45.7N	101.3W	FL373	-55.7	6.1	FL370	-56.3	3.9	1:14				
SEA-ORD	6/12/77	11	2:29	-58	FL390	2:14	43.9N	93.5W	FL356	-52.1	6.6	FL369	-55.1	1.0	1:39				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SEA-ORD	6/22/79	29	2:19	-57	FL390	2:03	43.8N	93.1W	FL377	-53.2	3.1	FL389	-55.1	1.2	1:13				
SEA-ORD	7/ 3/77	28	2:19	-54	FL370	0:24	47.1N	114.5W	FL363	-48.4	3.0	FL369	-49.0	2.0	2:00				
SEA-ORD	7/21/77	30	2:22	-54	FL367	0:10	47.4N	117.8W	FL360	-48.3	4.7	FL369	-50.3	1.0	2:00				
SEA-ORD	7/31/77	28	2:24	-57	FL370	0:30	46.7N	114.2W	FL364	-51.6	4.9	FL369	-52.7	3.7	2:04				
SEA-ORD	8/ 2/77	29	2:19	-58	FL390	1:24	45.2N	101.7W	FL384	-53.0	5.7	FL389	-56.1	.9	1:09				
SEA-ORD	8/14/75	29	2:19	-54	FL362	0:04	47.4N	117.8W	FL365	-49.3	5.2	FL371	-50.5	1.1	2:00				
SEA-ORD	12/10/76	28	2:20	-64	FL371	0:24	47.1N	114.4W	FL364	-57.6	4.6	FL370	-58.5	3.6	2:00				
SEA-ORD	12/19/76	30	2:30	-66	FL370	0:09	47.5N	117.9W	FL366	-52.7	6.6	FL369	-58.7	5.1	1:05				
SEA-PIK	1/21/79	263	7:21	-70	FL391	6:04	63.7N	21.9W	FL340	-55.8	3.7	FL330	-55.1	2.0	5:42	FL390	-59.4	5.6	1:13
SEA-SFO	4/ 6/79	14	1:04	-62	FL370	0:10	45.3N	122.6W	FL362	-57.1	5.1								
SEA-SFO	6/ 9/77	18	1:36	-61	FL371	1:30	39.3N	122.8W	FL390	-53.9	7.7	FL410	-56.4	1.2	1:15				
SEA-SFO	11/ 6/76	12	1:00	-61	FL390	0:09	45.2N	122.6W	FL380	-58.3	5.8								
SEA-SFO	12/29/76	14	1:04	-61	FL370	0:04	45.7N	122.5W	FL361	-58.1	3.2								
SFO-AKL	1/ 1/77	140	12:14	-65	FL410	11:14	29.7S	180.0E	FL386	-56.1	3.7	FL370	-57.7	2.1	1:39	FL390	-54.2	1.0	5:15
												FL410	-60.2	1.7	3:44				
SFO-AKL	2/ 3/77	133	11:25	-61	FL410	9:28	21.5S	175.4W	FL377	-51.1	5.8	FL359	-45.9	3.1	1:15	FL349	-43.8	.6	2:04
												FL370	-48.6	.6	1:29	FL389	-53.9	.8	3:19
												FL410	-59.3	1.0	2:16				
SFO-AKL	2/ 5/77	142	11:45	-59	FL390	11:45	35.5S	175.9E	FL372	-52.7	2.6	FL369	-50.1	2.1	3:25	FL390	-54.0	1.3	5:59
SFO-AKL	3/31/77	140	11:50	-58	FL390	6:54	4.0S	160.6W	FL371	-53.8	2.1	FL310	-50.8	1.7	1:14	FL349	-53.7	1.0	1:39
												FL369	-51.5	.5	2:50	FL389	-55.3	1.1	5:45
SFO-AKL	4/ 2/77	140	11:44	-60	FL390	11:44	35.6S	175.9E	FL367	-53.1	4.0	FL349	-52.5	2.0	1:18	FL369	-51.2	.8	2:24
SFO-AKL	5/ 5/77	143	11:56	-58	FL390	10:01	23.4S	176.4W	FL377	-53.7	3.3	FL389	-56.0	1.1	6:00				
SFO-AKL	6/ 1/78	137	11:39	-67	FL410	9:59	25.2S	177.4W	FL376	-54.3	6.9	FL331	-47.6	.8	1:19	FL370	-52.6	2.4	2:44
												FL390	-55.5	1.0	7:26				
												FL310	-42.6	1.3	1:13	FL350	-48.9	.7	1:15
												FL370	-51.8	.8	2:33	FL390	-56.8	1.2	4:02
												FL430	-65.3	1.0	1:25				
SFO-AKL	6/30/77	135	11:44	-57	FL390	9:49	23.7S	176.6W	FL372	-50.2	6.0	FL351	-45.2	.7	3:15	FL390	-55.5	.6	5:59
SFO-AKL	7/ 2/77	137	11:25	-57	FL390	7:50	13.2S	169.5W	FL367	-50.5	7.0	FL349	-45.7	.7	2:59	FL390	-56.1	.8	6:25
SFO-AKL	8/11/77	131	11:19	-63	FL411	7:26	9.7S	166.3W	FL376	-51.4	7.7	FL310	-37.8	1.8	1:14	FL350	-45.2	.7	1:08
												FL369	-50.9	.4	2:47	FL390	-56.3	.7	1:41
												FL410	-57.6	5.2	1:41				
SFO-AKL	8/13/77	134	11:54	-61	FL410	9:39	22.2S	175.8W	FL371	-50.3	7.1	FL350	-45.3	.8	4:25	FL390	-55.9	.6	3:39
												FL410	-58.1	1.0	2:09				
SFO-AKL	9/29/77	132	11:39	-62	FL410	8:49	16.7S	172.2W	FL381	-52.7	5.6	FL349	-46.7	1.6	3:44	FL369	-50.1	.4	1:09
												FL390	-54.8	.6	1:45	FL410	-58.2	3.8	4:24
SFO-AKL	10/ 1/77	116	11:23	-57	FL390	8:58	18.8S	173.6W	FL374	-51.1	4.6	FL349	-46.2	1.0	2:30	FL390	-54.3	2.6	6:39
SFO-AKL	10/13/77	240	11:28	-62	FL430	9:48	25.0S	177.3W	FL368	-51.0	3.9	FL349	-48.4	1.4	1:55	FL369	-50.3	.5	1:55
												FL390	-54.9	.7	4:23	FL430	-55.5	3.8	1:35
SFO-AKL	10/15/77	128	11:33	-59	FL410	8:48	17.4S	172.7W	FL375	-50.2	4.1	FL340	-48.4	1.0	1:10	FL349	-45.4	1.0	2:29
												FL369	-48.8	.4	1:31	FL389	-54.9	.7	2:54
												FL409	-52.2	2.8	2:45				
SFO-AKL	12/ 1/77	125	11:01	-56	FL390	6:11	3.6S	160.2W	FL372	-50.0	3.8	FL359	-49.6	1.9	1:49	FL350	-44.5	1.4	2:12
												FL369	-48.6	.9	1:30	FL390	-53.4	1.4	4:54
SFO-AKL	12/16/76	125	11:40	-61	FL410	7:50	9.9S	166.2W	FL387	-54.1	3.9	FL348	-51.3	1.0	1:19	FL369	-49.8	1.1	1:45
												FL390	-54.3	.6	3:00	FL410	-57.9	2.4	4:54
SFO-AKL	12/18/76	137	11:40	-58	FL390	10:00	24.3S	176.9W	FL366	-50.0	5.0	FL310	-44.2	2.3	1:25	FL350	-44.5	.8	2:41
												FL369	-49.4	.7	1:30	FL390	-54.8	1.6	5:29
SFO-AKL	12/23/76	141	11:39	-68	FL430	9:54	23.5S	176.5W	FL378	-53.9	4.3	FL349	-53.9	3.0	3:39	FL370	-50.0	1.0	2:38
												FL390	-55.5	1.4	3:09	FL429	-56.4	7.0	1:40

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-AKL	12/25/76	142	12:08	-70	FL430	11:04	28.9S	179.7W	FL393	-57.4	6.3	FL330	-49.0	.9	1:24	FL369	-53.3	2.0	2:25
												FL390	-54.8	.4	2:45	FL410	-60.3	.7	2:49
SFO-AKL	12/29/77	149	12:09	-58	FL410	9:09	15.7S	170.5W	FL374	-52.1	3.7	FL449	-68.3	1.1	1:33				
												FL320	-48.5	2.5	1:40	FL350	-49.2	.5	1:24
SFO-AKL	12/30/76	144	12:14	-62	FL350	0:30	34.3N	126.7W	FL380	-55.2	3.8	FL369	-50.0	2.2	2:50	FL390	-54.3	.7	2:39
SFO-BOS	5/11/75	49	4:05	-59	FL371	0:40	39.7N	113.1W	FL387	-54.3	4.2	FL409	-56.4	1.6	2:55				
SFO-BOS	9/12/75	44	3:43	-56	FL412	3:37	42.7N	77.8W	FL374	-51.5	4.3	FL350	-55.5	3.8	2:39	FL370	-50.9	.9	2:54
SFO-BOS	10/7/75	48	4:00	-62	FL411	3:50	42.6N	75.7W	FL375	-53.3	4.8	FL389	-55.0	.4	3:10	FL410	-60.2	1.0	2:49
SFO-BOS	10/19/75	48	4:15	-58	FL371	0:55	41.9N	111.4W	FL368	-52.8	5.0	FL370	-57.7	1.7	1:49	FL410	-52.3	.7	1:49
SFO-BOS	12/29/75	52	4:18	-62	FL370	1:17	43.4N	108.7W	FL386	-56.3	5.0	FL371	-52.4	3.6	3:09				
SFO-FAI	10/28/76	75	4:11	-60	FL350	2:10	53.2N	131.7W	FL330	-49.8	4.8	FL370	-53.4	4.5	3:50	FL409	-52.2	3.2	1:54
SFO-GUM	12/3/78	125	10:39	-61	FL410	10:24	14.6N	148.1E	FL392	-53.5	6.0	FL310	-46.4	2.3	1:30	FL350	-52.7	3.7	2:24
												FL370	-49.0	2.1	2:05	FL389	-50.5	3.5	3:45
SFO-HKG	1/18/78	162	13:31	-65	FL430	12:46	24.2N	120.5E	FL382	-50.2	7.2	FL410	-59.5	.7	4:14				
												FL349	-49.4	5.1	2:02	FL369	-42.4	3.9	2:29
SFO-HKG	1/20/78	159	13:43	-64	FL430	12:23	27.2N	124.1E	FL388	-51.3	6.9	FL390	-49.8	1.8	2:55	FL409	-49.8	1.2	1:45
												FL430	-61.7	3.0	2:39				
SFO-HKG	1/22/78	162	13:39	-64	FL430	12:54	24.9N	121.2E	FL386	-53.5	6.9	FL349	-49.3	6.5	2:54	FL369	-44.4	1.7	2:15
												FL390	-51.7	1.9	2:24	FL410	-48.9	2.2	2:39
SFO-HKG	1/25/78	163	13:48	-64	FL429	13:28	22.8N	118.2E	FL381	-53.3	4.8	FL429	-61.5	3.4	2:48				
												FL350	-59.0	.9	2:50	FL369	-45.5	2.5	2:54
SFO-HKG	1/27/78	157	13:15	-59	FL350	0:24	42.0N	125.6W	FL377	-49.7	4.7	FL390	-47.4	1.5	2:44	FL410	-54.7	1.8	1:39
SFO-HKG	1/29/78	162	13:27	-62	FL350	0:39	42.1N	130.2W	FL379	-52.1	5.8	FL430	-62.4	1.0	2:39				
SFO-HKG	2/1/78	161	13:34	-67	FL370	3:45	52.6N	157.7W	FL387	-53.6	8.3	FL330	-55.8	1.0	2:34	FL369	-50.3	4.2	2:15
												FL390	-49.8	1.7	2:48	FL410	-51.0	2.1	1:39
SFO-HKG	2/3/78	150	12:59	-65	FL370	4:35	54.1N	174.8W	FL382	-53.4	7.9	FL429	-60.2	2.7	2:34				
SFO-HKG	2/5/78	159	13:21	-70	FL371	5:37	53.8N	173.3E	FL384	-55.0	7.7	FL350	-52.6	5.6	2:05	FL369	-47.0	2.8	6:00
												FL390	-47.2	1.5	1:29	FL409	-55.1	1.4	2:54
SFO-HKG	4/7/79	160	13:33	-66	FL410	9:27	37.6N	141.6E	FL368	-53.9	7.8	FL350	-54.9	5.2	5:22	FL390	-45.0	2.3	3:24
												FL410	-54.3	3.0	4:14				
SFO-HKG	4/11/79	158	13:22	-68	FL410	10:26	34.3N	134.3E	FL377	-52.2	6.9	FL350	-60.5	1.6	3:05	FL369	-63.3	3.5	1:15
												FL390	-45.2	4.6	4:24	FL410	-46.8	2.6	2:00
SFO-HKG	5/24/78	148	13:22	-65	FL410	9:32	37.9N	142.1E	FL381	-52.5	7.2	FL430	-60.5	2.9	2:10				
SFO-HKG	5/26/78	154	13:09	-67	FL430	11:34	28.9N	126.5E	FL376	-55.2	8.5	FL350	-57.3	4.9	2:50	FL369	-54.1	5.5	3:00
												FL390	-45.1	3.5	4:09	FL430	-63.0	1.0	2:19
												FL369	-47.7	2.1	3:26	FL371	-62.1	6.4	2:51
												FL390	-49.0	1.7	2:15	FL409	-53.6	1.7	1:45
												FL430	-63.5	2.4	2:25				
												FL280	-38.9	1.1	1:08	FL309	-50.7	1.6	1:39
												FL369	-51.4	5.2	4:28	FL389	-63.1	.8	1:20
												FL409	-59.8	3.6	4:16				
												FL329	-49.9	.8	1:05	FL350	-53.1	3.6	2:35
												FL369	-46.9	3.6	3:16	FL389	-45.8	1.1	1:19
												FL410	-58.7	6.3	4:24				
												FL351	-46.6	7.5	3:15	FL370	-49.2	3.2	2:13
												FL390	-51.9	3.8	2:19	FL409	-60.0	1.9	4:00
												FL331	-47.9	1.1	2:05	FL351	-48.2	6.2	3:15
												FL390	-59.8	4.1	3:10	FL409	-63.8	1.4	1:54
												FL430	-63.8	1.3	1:34				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-HKG	5/29/78	156	13:32	-65	FL411	11:12	33.3N	131.6E	FL371	-55.4	5.7	FL330	-49.9	1.0	1:15	FL350	-55.2	3.0	4:06
												FL370	-52.1	7.5	1:49	FL390	-56.9	5.5	3:27
SFO-HKG	5/31/79	142	12:12	-59	FL390	8:37	39.3N	142.4E	FL376	-49.3	4.4	FL410	-60.4	2.3	2:19				
SFO-HKG	6/ 2/79	143	12:25	-59	FL391	7:15	47.1N	154.7E	FL376	-51.8	4.6	FL350	-48.7	1.8	2:35	FL369	-48.5	1.9	2:14
												FL389	-47.2	5.5	2:32	FL410	-53.4	3.0	3:19
												FL330	-47.5	1.9	1:09	FL350	-50.2	4.1	2:15
												FL369	-49.5	3.1	2:24	FL390	-55.8	1.9	2:49
SFO-HKG	6/ 4/79	149	12:37	-66	FL391	6:46	50.1N	160.2E	FL380	-53.0	7.9	FL410	-54.2	2.9	3:05				
SFO-HKG	8/14/78	151	12:30	-59	FL411	12:24	22.0N	115.8E	FL373	-52.5	3.1	FL349	-43.5	4.0	3:30	FL370	-49.0	2.1	1:56
SFO-HKG	8/17/78	148	12:14	-56	FL390	6:29	35.8N	168.6E	FL372	-52.0	3.0	FL390	-58.8	3.7	3:15	FL410	-60.3	1.9	3:20
												FL350	-50.1	.9	4:00	FL370	-52.7	2.0	3:34
SFO-HKG	8/19/78	145	12:19	-62	FL431	11:29	25.2N	122.0E	FL375	-53.4	3.7	FL390	-54.5	1.3	2:40	FL410	-56.8	1.1	1:34
SFO-HKG	8/21/78	140	12:25	-56	FL370	4:24	43.9N	171.4W	FL371	-51.1	3.4	FL350	-50.8	1.2	4:09	FL370	-52.5	1.3	1:54
												FL390	-53.4	2.0	5:45				
SFO-HKG	9/11/78	162	13:09	-60	FL411	11:45	26.7N	126.1E	FL376	-49.7	7.1	FL350	-52.2	1.8	5:19	FL390	-54.1	1.8	5:34
												FL331	-44.9	1.6	2:20	FL370	-50.8	4.2	1:59
												FL371	-45.5	.6	2:45				
SFO-HKG	9/13/78	150	12:49	-60	FL411	8:44	26.2N	151.3E	FL375	-52.2	5.2	FL411	-58.3	.7	4:03	FL351	-43.4	3.4	1:04
												FL350	-47.9	.9	6:29	FL391	-50.0	3.4	2:09
SFO-HKG	9/15/78	146	12:53	-59	FL390	4:34	31.9N	170.4W	FL377	-53.5	3.5	FL410	-58.2	.8	4:10	FL390	-55.8	.9	1:34
SFO-HKG	9/17/78	151	13:01	-60	FL411	10:30	23.8N	137.7E	FL376	-53.7	3.2	FL350	-50.4	1.2	3:54	FL390	-55.2	2.4	8:33
												FL350	-50.9	1.2	4:30	FL370	-53.0	2.0	1:45
SFO-HKG	12/ 9/77	162	13:45	-64	FL430	10:45	33.0N	131.5E	FL384	-54.3	6.7	FL390	-55.5	.8	3:39	FL410	-57.6	.9	2:30
												FL350	-46.7	4.2	2:05	FL369	-55.9	1.0	2:10
												FL390	-52.4	4.3	3:04	FL410	-53.7	1.5	1:04
SFO-HND	1/ 9/78	107	9:00	-55	FL331	4:26	54.5N	176.3W	FL328	-49.1	2.8	FL430	-63.2	.9	3:24				
SFO-HND	1/22/76	108	9:22	-61	FL370	5:16	54.7N	179.4W	FL348	-50.9	4.1	FL310	-49.3	1.7	1:40	FL330	-49.8	2.6	5:56
SFO-HND	2/22/77	91	9:46	-65	FL370	3:58	55.1N	161.2W	FL371	-47.4	4.7	FL310	-51.9	3.4	1:45	FL329	-51.3	1.3	1:27
SFO-HND	2/27/76	113	9:30	-70	FL390	7:54	41.2N	154.0E	FL356	-52.2	9.2	FL369	-50.7	5.0	4:50	FL369	-55.5	7.1	1:23
SFO-HND	3/11/75	119	9:49	-57	FL330	2:24	49.8N	143.2W	FL349	-48.3	3.3	FL349	-46.6	.8	1:55				
SFO-HND	3/18/76	111	9:45	-52	FL390	7:30	47.5N	156.4E	FL361	-45.9	2.3	FL389	-45.4	1.9	4:46	FL370	-44.3	1.5	2:05
SFO-HND	3/23/77	134	10:23	-66	FL391	8:06	46.3N	153.5E	FL359	-54.3	7.1	FL310	-49.8	2.0	2:59	FL349	-45.9	2.0	1:39
SFO-HND	3/30/77	114	9:47	-64	FL391	8:22	43.0N	148.5E	FL366	-56.6	5.6	FL390	-62.3	7.5	3:20	FL371	-46.6	.8	1:09
SFO-HND	4/ 4/78	107	9:22	-60	FL310	7:56	44.4N	150.5E	FL310	-49.3	4.2	FL310	-50.9	1.6	2:09	FL350	-55.1	2.2	1:20
SFO-HND	4/ 7/77	106	9:11	-64	FL391	9:00	37.9N	142.1E	FL372	-52.5	3.6	FL369	-47.1	2.5	4:55	FL390	-62.9	3.7	2:38
												FL350	-43.8	1.7	2:15	FL350	-59.7	1.5	2:10
SFO-HND	4/13/78	111	9:30	-63	FL349	7:05	49.5N	159.0E	FL341	-53.5	4.6	FL390	-47.8	2.0	3:40	FL390	-58.0	5.9	3:29
SFO-HND	4/18/77	115	9:45	-60	FL370	4:55	40.7N	174.3W	FL353	-53.0	3.7	FL310	-49.0	1.6	2:30	FL310	-54.1	2.7	3:00
												FL370	-48.4	4.3	2:59	FL371	-53.4	2.1	2:09
SFO-HND	6/22/77	110	9:20	-55	FL350	6:00	52.7N	167.7E	FL341	-47.9	4.7	FL330	-58.8	.7	1:25				
SFO-HND	7/27/77	111	9:17	-60	FL390	6:53	50.1N	160.1E	FL366	-51.0	6.5	FL370	-51.0	4.6	2:07	FL349	-54.4	4.6	7:30
												FL310	-47.0	2.4	5:46	FL350	-55.8	2.9	2:04
												FL351	-50.7	3.0	1:49				
												FL391	-53.0	4.2	4:06				
												FL310	-50.7	1.9	1:39				
												FL331	-53.3	.9	1:50				
												FL370	-52.6	3.6	4:49				
												FL310	-43.4	2.9	1:35				
												FL350	-47.4	4.1	2:19				
												FL390	-57.3	1.2	3:04				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-HND	8/12/76	116	8:50	-53	FL330	6:15	50.5N	162.2E	FL323	-44.4	6.1	FL289	-34.4	2.2	1:16	FL309	-42.7	3.8	1:23
SFO-HND	9/ 5/76	111	9:33	-57	FL330	4:19	57.6N	165.4W	FL327	-47.5	5.4	FL330	-48.7	3.2	4:25	FL349	-42.8	2.3	1:11
SFO-HND	10/ 4/77	108	9:32	-64	FL410	7:08	37.9N	163.6E	FL383	-57.0	4.0	FL330	-48.7	4.6	8:13				
SFO-HND	10/ 7/77	112	9:24	-56	FL370	5:05	38.6N	177.4W	FL357	-50.4	4.6	FL349	-54.0	1.1	1:54	FL369	-55.9	1.3	1:49
SFO-HND	10/13/77	107	9:20	-59	FL351	4:54	54.0N	179.8E	FL341	-50.0	5.3	FL390	-59.1	2.4	2:32	FL410	-58.5	5.2	2:54
SFO-HND	10/20/77	109	10:09	-55	FL351	6:00	55.1N	172.7E	FL350	-48.1	2.7	FL311	-43.0	.6	1:15	FL350	-52.1	1.4	2:09
SFO-HND	10/26/77	112	8:55	-57	FL350	7:48	43.0N	148.5E	FL340	-46.7	5.4	FL370	-52.7	2.6	1:55	FL390	-53.6	1.0	2:24
SFO-HND	12/29/76	107	9:03	-56	FL323	0:04	40.4N	124.8W	FL368	-48.4	3.7	FL311	-43.0	.9	1:09	FL350	-52.1	3.3	7:30
SFO-HNL	1/ 1/78	54	4:33	-58	FL339	0:04	37.6N	125.2W	FL386	-50.6	2.5	FL351	-49.3	3.0	3:20	FL370	-47.8	2.5	4:00
SFO-HNL	1/ 3/77	50	4:14	-60	FL361	1:49	32.3N	138.7W	FL358	-54.4	4.4	FL310	-41.5	3.8	2:24	FL350	-48.6	4.3	0:00
SFO-HNL	1/ 4/79	54	4:24	-57	FL346	0:09	36.9N	125.3W	FL357	-48.4	3.7	FL349	-49.2	1.7	1:25	FL370	-45.3	2.5	2:00
SFO-HNL	1/ 6/77	52	4:07	-56	FL350	1:01	33.6N	132.8W	FL347	-50.6	5.1	FL390	-46.8	1.3	3:30				
SFO-HNL	1/ 6/78	53	4:31	-61	FL363	0:15	36.6N	126.4W	FL359	-48.7	8.8	FL360	-55.0	3.7	3:54				
SFO-HNL	1/ 6/78	54	4:28	-58	FL351	0:15	35.9N	125.5W	FL348	-48.0	7.2	FL360	-48.5	3.0	4:04				
SFO-HNL	1/ 8/78	56	4:39	-56	FL351	0:09	36.1N	124.9W	FL349	-45.2	3.9	FL350	-51.3	4.1	3:51				
SFO-HNL	1/ 9/79	59	4:28	-56	FL360	0:15	36.4N	127.1W	FL356	-51.4	4.4	FL362	-49.3	8.3	4:07				
SFO-HNL	1/11/78	57	4:55	-48	FL310	0:09	36.0N	125.0W	FL309	-42.0	4.8	FL350	-48.1	7.3	4:13				
SFO-HNL	1/11/78	16	1:25	-51	FL316	0:05	36.3N	124.6W	FL343	-47.2	2.6	FL350	-45.3	3.6	4:29				
SFO-HNL	1/11/78	51	4:09	-55	FL351	0:09	37.8N	125.4W	FL349	-47.6	5.6	FL359	-52.3	1.8	4:08				
SFO-HNL	1/14/77	50	4:09	-60	FL360	0:20	36.3N	127.5W	FL358	-55.0	4.7	FL310	-42.1	4.8	4:45				
SFO-HNL	1/14/78	51	4:19	-49	FL322	0:05	36.4N	124.4W	FL346	-43.2	2.6	FL350	-47.5	1.2	1:15				
SFO-HNL	1/14/79	39	4:24	-60	FL350	2:15	32.8N	143.6W	FL348	-50.4	4.3	FL360	-47.7	5.6	3:59				
SFO-HNL	1/15/78	60	5:04	-46	FL360	3:39	28.0N	147.8W	FL357	-43.0	2.4	FL360	-55.3	4.3	3:54				
SFO-HNL	1/16/78	61	5:02	-51	FL319	0:07	36.9N	124.7W	FL348	-44.0	1.7	FL350	-42.6	1.4	3:00				
SFO-HNL	1/19/78	52	4:12	-58	FL350	1:19	32.9N	134.7W	FL348	-51.0	5.6	FL350	-50.8	4.2	4:04				
SFO-HNL	1/19/79	48	3:54	-59	FL350	0:10	35.6N	126.4W	FL349	-53.1	5.3	FL359	-43.4	2.1	4:34				
SFO-HNL	1/21/78	48	4:15	-59	FL350	1:35	32.1N	136.6W	FL348	-55.6	3.7	FL350	-43.9	1.1	4:49				
SFO-HNL	1/22/79	49	4:00	-59	FL350	0:15	35.6N	126.7W	FL348	-55.6	3.7	FL350	-51.2	5.5	4:02				
SFO-HNL	1/23/78	57	3:58	-56	FL348	3:08	25.2N	149.9W	FL348	-43.8	6.5	FL349	-53.4	5.0	3:39				
SFO-HNL	1/25/78	47	4:11	-58	FL351	0:09	37.8N	125.7W	FL323	-48.4	4.3	FL349	-56.2	2.6	3:54				
SFO-HNL	1/25/79	49	3:59	-52	FL348	0:09	36.7N	126.2W	FL349	-52.3	5.8	FL309	-43.9	6.3	3:49				
SFO-HNL	1/26/76	49	4:00	-58	FL350	0:09	36.5N	125.6W	FL358	-46.9	3.3	FL350	-45.8	1.0	2:55				
SFO-HNL	1/26/78	48	3:54	-60	FL360	1:50	31.7N	140.1W	FL347	-48.5	4.3	FL350	-52.4	5.8	4:01				
SFO-HNL	1/27/77	39	4:31	-58	FL361	0:46	34.9N	132.0W	FL356	-53.1	6.7	FL360	-46.7	3.3	3:44				
SFO-HNL	1/27/78	50	3:56	-50	FL349	0:08	36.2N	124.7W	FL359	-51.9	4.8	FL350	-48.9	3.9	3:45				
SFO-HNL	1/27/79	49	4:00	-62	FL360	0:20	36.3N	127.5W	FL324	-45.5	3.1	FL359	-53.6	6.3	3:39				
SFO-HNL	1/29/78	52	4:09	-58	FL351	1:24	32.2N	136.4W	FL357	-57.8	3.2	FL360	-56.0	3.1	1:55	FL362	-48.9	3.1	2:11
SFO-HNL	1/30/79	49	4:02	-61	FL360	1:15	33.8N	134.9W	FL349	-50.9	7.0	FL310	-47.0	.8	2:22	FL350	-42.5	3.0	1:09
SFO-HNL	1/31/77	28	4:11	-62	FL360	0:30	36.0N	128.4W	FL355	-54.6	6.6	FL360	-58.3	2.2	3:45				
SFO-HNL	1/31/78	49	4:14	-62	FL357	0:09	36.8N	125.8W	FL346	-52.2	8.6	FL350	-51.2	6.9	4:00				
SFO-HNL	2/ 1/78	52	4:24	-59	FL351	0:09	36.0N	125.3W	FL358	-53.6	8.4	FL360	-55.9	5.6	3:37				
SFO-HNL	2/ 2/76	45	3:57	-55	FL350	0:42	34.6N	130.1W	FL348	-47.8	6.8	FL360	-57.3	4.1	3:35				
SFO-HNL	2/ 3/76	47	3:54	-57	FL350	3:34	23.2N	154.4W	FL349	-49.8	5.1	FL360	-54.2	8.2	3:59				
SFO-HNL	2/ 3/78	49	4:24	-58	FL351	0:45	34.6N	129.9W	FL348	-52.0	3.5	FL350	-47.9	6.8	4:14				
SFO-HNL	2/ 3/78	54	4:24	-61	FL360	1:15	34.1N	134.2W	FL347	-48.2	9.5	FL350	-50.0	4.9	3:46				
SFO-HNL	2/ 3/78	53	4:12	-61	FL360	0:15	36.6N	126.3W	FL357	-50.9	9.5	FL360	-52.0	3.5	3:39				
SFO-HNL	2/ 5/78	55	4:39	-40	FL350	0:20	35.7N	126.3W	FL359	-49.0	9.3	FL350	-49.0	8.9	4:09				
SFO-HNL	2/ 7/79	52	4:15	-55	FL351	0:09	35.8N	125.8W	FL347	-36.5	2.8	FL361	-51.6	9.0	4:09				
SFO-HNL	2/ 8/79	52	4:08	-50	FL322	0:05	36.8N	125.7W	FL344	-51.3	6.5	FL350	-49.2	9.3	3:52				
									FL321	-45.6	3.8	FL350	-36.6	2.6	4:19				
												FL351	-53.4	1.2	3:45				
												FL321	-45.8	3.7	3:59				



APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----				-----FLIGHT SEGMENTS-----			
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM
SFO-HNL	2/10/76	47	3:59	-54	FL330	0:04	37.8N	125.2W	FL347	-50.2	3.4	FL350	-50.7	2.5	3:39
SFO-HNL	2/12/77	51	4:09	-56	FL350	0:09	35.9N	125.4W	FL348	-50.8	4.5	FL349	-51.2	3.9	4:00
SFO-HNL	2/12/78	56	4:39	-62	FL351	0:10	36.4N	125.5W	FL349	-51.2	5.9	FL350	-51.2	5.8	4:29
SFO-HNL	2/15/78	53	4:22	-62	FL353	0:10	36.0N	125.3W	FL348	-53.1	7.7	FL351	-53.5	7.5	4:07
SFO-HNL	2/17/78	47	4:09	-64	FL361	0:10	36.8N	125.6W	FL358	-56.8	7.1	FL360	-57.2	6.9	3:59
SFO-HNL	2/18/79	56	4:34	-62	FL360	0:15	36.4N	127.0W	FL357	-55.1	5.8	FL360	-55.6	4.7	4:14
SFO-HNL	2/19/78	62	4:14	-50	FL310	0:05	36.3N	124.5W	FL304	-45.0	4.6	FL310	-47.9	1.1	3:08
SFO-HNL	2/19/79	62	5:04	-61	FL357	0:10	37.0N	124.9W	FL356	-52.1	4.9	FL359	-52.7	4.0	4:44
SFO-HNL	2/20/77	54	4:18	-50	FL333	0:04	36.3N	124.6W	FL348	-44.1	2.5	FL349	-44.2	2.1	4:09
SFO-HNL	2/20/79	58	4:40	-53	FL350	0:09	35.9N	125.5W	FL345	-48.9	4.1	FL350	-50.3	1.1	3:55
SFO-HNL	2/21/78	51	4:24	-58	FL345	0:10	36.1N	124.8W	FL346	-50.0	7.8	FL350	-50.5	7.0	4:05
SFO-HNL	2/22/78	51	4:21	-57	FL351	0:11	35.9N	125.5W	FL347	-48.3	8.0	FL350	-48.6	7.8	4:10
SFO-HNL	2/25/78	51	4:19	-59	FL350	0:24	35.7N	127.3W	FL348	-51.2	6.4	FL350	-51.4	6.2	4:09
SFO-HNL	2/26/76	53	4:34	-66	FL390	2:02	31.3N	139.4W	FL377	-60.2	5.1	FL369	-61.0	0.0	1:37
SFO-HNL	2/27/78	60	4:23	-50	FL310	1:22	32.3N	135.4W	FL309	-41.1	6.5	FL309	-41.1	6.6	4:18
SFO-HNL	2/28/78	54	4:30	-58	FL351	0:15	35.7N	126.3W	FL348	-43.9	5.9	FL350	-44.3	5.7	4:15
SFO-HNL	2/28/78	53	4:24	-61	FL351	0:59	36.5N	133.3W	FL372	-51.9	5.3	FL350	-56.8	4.9	1:34
SFO-HNL	2/28/79	52	3:52	-62	FL370	0:25	36.1N	128.2W	FL373	-55.4	4.9	FL369	-59.1	1.9	1:51
SFO-HNL	3/ 1/76	52	4:20	-58	FL350	1:04	33.8N	132.7W	FL347	-51.6	4.5	FL350	-52.4	3.0	4:00
SFO-HNL	3/ 2/78	55	5:00	-44	FL351	1:24	33.2N	133.8W	FL347	-41.3	2.3	FL350	-41.6	1.5	4:34
SFO-HNL	3/ 5/79	52	3:49	-61	FL370	0:14	35.2N	126.5W	FL367	-48.7	4.2	FL370	-49.0	3.8	3:35
SFO-HNL	3/ 7/78	55	4:44	-61	FL360	0:09	36.8N	125.7W	FL359	-56.3	5.1	FL360	-56.6	4.6	4:35
SFO-HNL	3/10/78	50	3:48	-63	FL351	0:04	36.8N	125.7W	FL360	-58.0	3.6	FL360	-58.0	3.5	3:34
SFO-HNL	3/10/78	50	4:09	-62	FL361	1:19	33.6N	135.4W	FL357	-57.2	5.0	FL360	-57.9	3.4	3:50
SFO-HNL	3/14/79	53	3:48	-63	FL371	1:42	31.6N	140.4W	FL360	-58.6	4.7	FL351	-58.0	3.6	1:08
SFO-HNL	3/15/77	46	3:59	-62	FL350	0:39	34.9N	128.8W	FL348	-54.5	6.3	FL350	-54.6	6.3	3:49
SFO-HNL	3/18/77	47	3:46	-60	FL360	1:22	32.9N	137.4W	FL356	-53.6	5.2	FL359	-54.1	4.7	3:26
SFO-HNL	3/19/79	198	3:49	-63	FL370	0:48	34.9N	132.0W	FL369	-53.6	6.9	FL370	-53.7	6.8	0:00
SFO-HNL	3/20/77	47	3:52	-59	FL347	0:07	36.0N	125.1W	FL348	-54.8	4.1	FL349	-55.1	3.6	3:45
SFO-HNL	3/20/77	46	3:49	-59	FL350	0:10	36.0N	125.8W	FL348	-53.6	5.8	FL349	-53.9	5.6	3:39
SFO-HNL	3/22/77	53	3:57	-60	FL350	0:23	35.5N	127.5W	FL348	-55.5	3.7	FL350	-55.9	2.8	3:44
SFO-HNL	3/22/77	41	3:57	-62	FL360	0:13	36.6N	126.3W	FL358	-57.0	3.8	FL359	-57.3	3.2	3:49
SFO-HNL	3/22/78	31	2:07	-57	FL351	1:31	32.1N	136.8W	FL349	-52.9	4.4	FL350	-53.4	4.0	2:00
SFO-HNL	3/24/77	44	3:49	-62	FL387	2:05	31.3N	143.4W	FL360	-53.1	5.1	FL349	-56.8	1.1	1:04
SFO-HNL	3/28/76	43	3:44	-58	FL351	1:04	33.3N	134.2W	FL348	-55.3	3.3	FL351	-56.0	1.7	3:24
SFO-HNL	3/29/76	47	4:09	-58	FL350	0:19	37.3N	127.7W	FL346	-55.6	4.0	FL350	-56.5	1.1	3:54
SFO-HNL	3/30/79	54	4:07	-53	FL330	0:05	36.8N	125.7W	FL330	-47.8	3.2	FL331	-48.1	2.7	3:57
SFO-HNL	4/ 1/78	46	4:00	-54	FL320	0:30	36.0N	128.3W	FL319	-48.7	2.8	FL320	-48.8	2.7	3:54
SFO-HNL	4/ 2/76	53	4:07	-66	FL390	1:37	32.3N	136.8W	FL375	-59.8	5.4	FL390	-63.4	2.6	2:45
SFO-HNL	4/ 5/78	46	3:59	-62	FL361	0:39	35.5N	130.1W	FL358	-57.9	4.4	FL360	-58.6	2.7	3:45
SFO-HNL	4/ 7/78	47	3:49	-57	FL360	0:49	35.0N	131.6W	FL357	-52.8	4.8	FL359	-53.6	3.7	3:34
SFO-HNL	4/ 8/79	49	3:59	-57	FL370	2:09	30.5N	142.7W	FL356	-53.6	3.8	FL350	-53.5	.8	1:50
SFO-HNL	4/ 9/77	48	3:59	-57	FL350	1:04	33.5N	133.1W	FL349	-52.9	2.8	FL350	-53.2	2.2	3:49
SFO-HNL	4/11/76	44	4:00	-58	FL350	0:35	35.0N	129.3W	FL349	-52.8	3.0	FL350	-52.9	3.0	3:49
SFO-HNL	4/11/77	41	4:14	-65	FL400	1:00	34.7N	132.6W	FL394	-61.8	4.6	FL399	-62.7	1.7	3:59
SFO-HNL	4/11/77	49	3:59	-59	FL351	0:09	36.4N	125.7W	FL349	-54.5	2.8	FL350	-54.6	2.4	3:49
SFO-HNL	4/11/78	50	4:15	-59	FL361	1:19	33.6N	135.5W	FL358	-56.2	3.1	FL360	-56.9	.9	4:00
SFO-HNL	4/12/75	49	4:02	-67	FL390	0:30	35.2N	128.8W	FL387	-62.4	3.5	FL390	-63.1	1.9	3:48
SFO-HNL	4/12/75	50	4:30	-68	FL411	2:09	32.1N	142.1W	FL396	-64.8	5.4	FL390	-65.0	.9	1:49
SFO-HNL	4/14/77	44	3:41	-54	FL351	0:09	35.9N	125.7W	FL348	-51.3	2.6	FL350	-51.7	1.4	3:31
SFO-HNL	4/15/77	45	3:56	-52	FL350	0:10	35.9N	125.6W	FL346	-50.0	4.1	FL349	-50.8	1.6	3:40
SFO-HNL	4/15/77	46	3:59	-53	FL350	0:09	36.1N	125.6W	FL347	-50.8	3.6	FL350	-51.6	1.6	3:44
SFO-HNL	4/15/78	49	4:04	-56	FL349	2:09	33.0N	144.3W	FL346	-51.4	5.1	FL349	-51.9	4.4	3:49

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-HNL	4/17/76	53	4:02	-59	FL390	2:48	27.3N	147.6W	FL364	-53.6	3.5	FL350	-52.4	.7	2:04	FL389	-56.5	1.8	1:39
SFO-HNL	4/19/77	51	4:14	-64	FL390	2:49	29.0N	148.0W	FL361	-55.9	4.4	FL350	-55.6	.6	2:30	FL389	-58.1	4.9	1:20
SFO-HNL	4/19/77	50	4:10	-56	FL351	0:09	35.9N	125.5W	FL347	-53.6	3.9	FL350	-54.4	1.5	3:56				
SFO-HNL	4/19/79	51	4:09	-57	FL351	2:14	30.2N	143.4W	FL340	-52.9	2.4	FL331	-51.3	.6	1:49	FL350	-54.6	1.7	2:04
SFO-HNL	4/21/78	51	4:26	-57	FL360	0:21	36.4N	127.1W	FL358	-55.2	2.8	FL360	-55.6	1.1	4:05				
SFO-HNL	4/21/79	55	4:30	-52	FL331	0:05	36.8N	125.8W	FL331	-49.4	2.0	FL331	-49.6	1.8	4:19				
SFO-HNL	4/23/76	47	3:54	-38	FL390	2:19	29.1N	144.1W	FL364	-52.2	3.7	FL350	-51.2	.9	2:00	FL389	-55.2	1.1	1:30
SFO-HNL	4/25/78	48	4:04	-56	FL361	0:54	34.7N	132.6W	FL359	-53.0	1.6	FL360	-53.0	1.5	3:54				
SFO-HNL	4/25/78	45	3:59	-50	FL321	0:05	36.8N	125.6W	FL321	-44.4	1.4	FL320	-44.3	1.3	3:54				
SFO-HNL	4/26/77	54	4:24	-57	FL360	1:05	34.4N	133.2W	FL356	-53.7	4.8	FL359	-54.8	1.7	4:05				
SFO-HNL	4/27/76	50	4:08	-56	FL352	1:39	31.6N	138.6W	FL347	-51.7	4.3	FL351	-52.7	1.7	3:49				
SFO-HNL	4/27/78	46	3:55	-58	FL361	0:15	36.5N	126.9W	FL357	-55.7	4.1	FL360	-56.7	1.3	3:40				
SFO-HNL	5/1/77	47	4:04	-57	FL360	2:34	29.3N	145.1W	FL356	-52.9	4.0	FL360	-53.6	2.9	3:49				
SFO-HNL	5/1/77	41	4:00	-62	FL390	2:19	29.1N	143.6W	FL371	-56.8	4.5	FL349	-54.0	1.1	1:30	FL390	-59.8	2.0	2:05
SFO-HNL	5/8/78	44	4:00	-57	FL360	0:54	34.8N	132.3W	FL355	-51.9	5.2	FL360	-53.0	2.2	3:39				
SFO-HNL	5/9/79	50	4:04	-48	FL331	1:45	31.7N	140.2W	FL329	-44.9	2.8	FL330	-45.3	1.8	3:54				
SFO-HNL	5/10/75	46	3:59	-47	FL311	0:04	36.7N	125.0W	FL308	-43.5	2.6	FL309	-43.8	1.9	3:49				
SFO-HNL	5/12/75	47	4:02	-54	FL350	0:41	34.4N	130.8W	FL348	-51.2	3.2	FL350	-51.8	.8	3:50				
SFO-HNL	5/15/79	46	3:44	-54	FL350	0:45	35.2N	131.0W	FL348	-51.7	3.2	FL350	-52.3	.8	3:29				
SFO-HNL	5/16/75	45	3:44	-45	FL311	0:04	36.6N	125.3W	FL310	-39.9	1.6	FL310	-40.0	1.6	3:39				
SFO-HNL	5/16/78	50	4:09	-57	FL381	2:54	27.6N	148.5W	FL360	-52.9	4.7	FL360	-53.9	.6	2:30				
SFO-HNL	5/17/79	45	3:39	-48	FL331	3:09	25.0N	153.1W	FL328	-44.7	2.7	FL330	-45.3	1.5	3:24				
SFO-HNL	5/19/77	48	4:00	-56	FL359	0:05	36.8N	125.7W	FL359	-52.8	1.6	FL360	-53.0	1.3	3:54				
SFO-HNL	5/25/78	40	3:45	-55	FL351	0:09	35.5N	126.9W	FL349	-50.2	3.0	FL350	-50.7	2.0	3:23				
SFO-HNL	5/28/75	45	3:49	-52	FL350	0:10	36.3N	126.1W	FL346	-50.7	3.1	FL348	-51.3	.9	3:39				
SFO-HNL	5/28/76	47	4:00	-56	FL349	0:10	36.0N	125.1W	FL347	-51.1	4.0	FL350	-51.8	2.7	3:45				
SFO-HNL	5/29/79	47	3:49	-56	FL370	1:30	32.3N	138.7W	FL365	-53.4	4.5	FL370	-54.7	.8	3:30				
SFO-HNL	5/30/78	47	3:54	-56	FL361	0:09	36.6N	126.6W	FL359	-53.5	2.3	FL360	-53.9	1.1	3:39				
SFO-HNL	5/31/77	44	4:04	-61	FL390	0:09	36.0N	125.1W	FL384	-57.5	5.6	FL389	-59.0	1.2	3:44				
SFO-HNL	5/31/77	45	3:54	-55	FL360	0:15	36.5N	126.7W	FL357	-52.4	3.6	FL360	-53.0	1.1	3:44				
SFO-HNL	6/2/78	50	4:09	-54	FL360	0:09	36.6N	126.5W	FL357	-52.6	3.8	FL359	-53.4	1.0	3:54				
SFO-HNL	6/2/78	48	4:05	-54	FL360	0:10	36.6N	126.5W	FL359	-53.1	2.3	FL360	-53.5	.7	3:54				
SFO-HNL	6/2/79	48	3:54	-57	FL370	1:24	32.6N	137.9W	FL367	-53.8	3.4	FL370	-54.5	1.4	3:39				
SFO-HNL	6/6/78	50	4:05	-53	FL360	0:35	35.4N	130.4W	FL357	-50.7	3.7	FL359	-51.5	.7	3:49				
SFO-HNL	6/7/77	32	4:05	-54	FL359	1:30	32.8N	137.6W	FL355	-49.3	4.3	FL359	-50.4	1.2	3:34				
SFO-HNL	6/8/79	53	4:18	-57	FL370	0:30	35.6N	129.6W	FL367	-52.7	3.7	FL369	-53.4	1.9	4:03				
SFO-HNL	6/9/79	53	4:19	-55	FL366	0:35	35.3N	130.7W	FL365	-53.0	4.0	FL370	-54.2	.7	3:39				
SFO-HNL	6/13/75	43	3:45	-58	FL390	0:20	37.1N	128.4W	FL381	-55.1	6.7	FL389	-57.1	.7	3:19				
SFO-HNL	6/13/77	34	3:54	-56	FL361	0:09	36.5N	126.8W	FL360	-51.1	1.5	FL360	-51.2	1.5	3:49				
SFO-HNL	6/13/79	52	4:14	-55	FL361	1:14	34.7N	135.4W	FL358	-52.4	3.1	FL360	-53.0	1.3	4:00				
SFO-HNL	6/14/77	21	3:58	-56	FL360	1:26	33.0N	136.9W	FL352	-49.4	6.5	FL360	-51.4	2.2	3:41				
SFO-HNL	6/14/77	24	3:58	-55	FL360	0:45	35.3N	130.8W	FL356	-50.5	4.5	FL360	-51.3	2.3	3:43				
SFO-HNL	6/14/78	52	4:15	-55	FL360	0:24	36.3N	127.5W	FL358	-53.0	3.4	FL360	-53.6	1.4	4:00				
SFO-HNL	6/15/79	196	4:16	-56	FL370	3:00	28.0N	147.8W	FL369	-54.7	1.9	FL370	-55.1	.7	3:28				
SFO-HNL	6/17/77	46	3:49	-54	FL360	0:30	35.4N	130.3W	FL358	-51.4	1.7	FL360	-51.5	1.5	3:39				
SFO-HNL	6/17/78	49	4:00	-55	FL350	1:05	35.1N	134.5W	FL346	-49.8	4.7	FL350	-50.7	3.2	3:39				
SFO-HNL	6/17/79	48	3:56	-52	FL350	3:24	25.2N	152.8W	FL347	-50.1	2.8	FL350	-50.7	.7	3:36				
SFO-HNL	6/19/75	51	4:15	-52	FL351	0:10	36.4N	126.0W	FL348	-49.3	3.9	FL350	-51.1	.7	2:15	FL352	-49.0	.5	1:40
SFO-HNL	6/19/77	43	3:44	-54	FL361	0:09	36.4N	127.0W	FL359	-50.3	1.8	FL360	-50.5	1.4	3:34				
SFO-HNL	6/22/79	50	4:05	-57	FL370	2:05	30.6N	142.7W	FL359	-53.4	3.5	FL350	-52.0	.9	1:45	FL370	-55.5	1.2	2:05
SFO-HNL	6/25/77	47	3:50	-50	FL350	0:25	35.2N	127.9W	FL348	-48.1	3.1	FL350	-48.7	1.3	3:40				
SFO-HNL	6/27/78	52	4:15	-56	FL363	1:30	32.4N	138.4W	FL357	-50.3	4.4	FL360	-52.1	.9	1:10	FL360	-50.8	1.9	2:45
SFO-HNL	6/28/77	47	3:49	-52	FL360	0:20	36.2N	128.0W	FL357	-48.9	4.3	FL360	-49.7	2.1	3:34				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----				-----FLIGHT SEGMENTS-----			
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM
SFO-HNL	6/28/77	44	3:44	-52	FL360	0:30	35.6N	129.8W	FL355	-48.3	4.8	FL359	-49.5	2.1	3:24
SFO-HNL	7/ 1/79	48	3:54	-58	FL370	1:15	33.1N	136.9W	FL367	-54.3	4.0	FL370	-55.4	1.5	3:34
SFO-HNL	7/ 5/78	55	4:29	-51	FL361	0:25	36.2N	127.9W	FL357	-48.6	3.9	FL360	-49.5	1.1	4:09
SFO-HNL	7/ 6/77	49	4:05	-59	FL400	3:00	27.0N	149.6W	FL368	-53.5	4.4	FL360	-52.7	.7	2:35
SFO-HNL	7/ 8/79	52	4:15	-54	FL361	0:15	35.8N	127.0W	FL357	-50.7	4.2	FL360	-51.4	2.4	4:00
SFO-HNL	7/ 9/78	49	4:05	-56	FL390	2:40	27.7N	146.3W	FL366	-49.8	5.3	FL350	-45.5	.6	2:04
SFO-HNL	7/10/77	46	3:54	-56	FL370	2:49	28.6N	150.5W	FL356	-51.0	2.7	FL350	-50.5	1.0	2:24
SFO-HNL	7/10/77	47	3:58	-53	FL360	2:30	29.1N	145.7W	FL358	-49.7	3.6	FL360	-50.3	1.5	3:49
SFO-HNL	7/12/78	50	4:04	-45	FL320	1:30	32.9N	137.3W	FL319	-41.5	2.4	FL320	-41.8	1.8	4:00
SFO-HNL	7/12/79	48	3:54	-52	FL370	2:24	26.6N	144.8W	FL365	-48.2	4.8	FL370	-49.5	1.1	3:29
SFO-HNL	7/14/77	47	4:05	-52	FL360	0:39	35.1N	131.4W	FL357	-49.9	3.2	FL359	-50.6	.8	3:50
SFO-HNL	7/14/78	52	4:15	-53	FL361	1:35	32.5N	138.2W	FL358	-48.8	4.2	FL360	-49.7	2.3	4:00
SFO-HNL	7/15/77	48	4:04	-52	FL360	0:44	35.1N	131.4W	FL357	-50.5	3.5	FL360	-51.3	.6	3:49
SFO-HNL	7/16/78	50	4:05	-50	FL361	0:24	35.9N	128.9W	FL358	-48.8	2.5	FL360	-49.3	.5	3:50
SFO-HNL	7/16/78	52	4:14	-48	FL351	0:09	35.8N	125.7W	FL349	-46.8	2.1	FL350	-47.2	.7	4:04
SFO-HNL	7/20/78	47	4:00	-49	FL360	3:09	26.1N	151.3W	FL339	-44.3	4.0	FL320	-41.5	.7	1:39
SFO-HNL	7/22/78	51	4:09	-40	FL310	0:45	34.3N	130.8W	FL309	-35.9	2.3	FL310	-36.1	2.1	4:00
SFO-HNL	7/22/78	48	3:54	-51	FL361	0:09	36.5N	126.7W	FL358	-47.1	3.0	FL360	-47.6	1.6	3:40
SFO-HNL	7/24/77	46	3:53	-53	FL350	0:21	36.9N	129.1W	FL349	-49.8	1.7	FL350	-49.9	1.7	3:47
SFO-HNL	7/28/78	51	4:09	-51	FL361	3:05	27.2N	149.3W	FL359	-47.8	2.7	FL360	-48.2	1.2	3:59
SFO-HNL	7/30/77	47	4:03	-53	FL360	1:15	33.4N	136.0W	FL358	-50.4	3.3	FL360	-51.1	1.5	3:48
SFO-HNL	7/31/78	45	3:39	-57	FL391	2:14	27.6N	146.5W	FL373	-50.9	4.7	FL350	-45.7	.8	1:24
SFO-HNL	8/ 3/78	50	4:04	-54	FL361	1:54	31.0N	141.6W	FL358	-50.6	3.5	FL360	-51.4	1.6	3:49
SFO-HNL	8/ 4/77	51	4:16	-52	FL360	1:16	33.9N	134.8W	FL358	-49.5	3.1	FL360	-49.9	1.3	4:02
SFO-HNL	8/ 7/78	49	3:59	-53	FL360	1:54	31.0N	141.8W	FL358	-49.9	3.3	FL360	-50.6	1.7	3:45
SFO-HNL	8/ 8/77	47	4:07	-57	FL400	3:16	26.0N	151.5W	FL366	-51.1	4.5	FL360	-51.0	.8	2:52
SFO-HNL	8/11/78	49	3:59	-54	FL360	1:44	31.2N	141.2W	FL349	-47.7	4.4	FL360	-49.9	2.4	2:49
SFO-HNL	8/13/75	53	4:10	-56	FL391	2:05	31.5N	143.3W	FL370	-51.9	4.4	FL350	-50.0	1.2	1:24
SFO-HNL	8/16/77	47	4:04	-52	FL360	1:26	32.9N	137.2W	FL358	-47.7	3.6	FL360	-48.1	2.5	3:47
SFO-HNL	8/16/77	47	4:04	-50	FL349	1:19	34.3N	136.5W	FL346	-45.9	3.3	FL349	-46.5	2.1	3:44
SFO-HNL	8/20/77	46	3:54	-53	FL360	1:15	33.4N	135.9W	FL357	-49.3	3.4	FL359	-49.9	2.2	3:39
SFO-HNL	8/22/78	45	3:54	-48	FL320	0:05	36.7N	126.0W	FL320	-45.9	1.1	FL320	-46.0	.8	3:49
SFO-HNL	8/31/77	44	4:00	-51	FL360	1:49	31.5N	140.7W	FL355	-47.2	4.8	FL359	-48.4	1.2	3:39
SFO-HNL	8/31/77	45	3:59	-49	FL360	0:05	36.8N	125.8W	FL359	-47.3	1.8	FL359	-47.5	1.3	3:54
SFO-HNL	9/ 4/77	43	4:05	-50	FL360	0:59	34.7N	132.4W	FL356	-48.1	3.6	FL359	-48.8	.6	3:46
SFO-HNL	9/ 5/77	47	4:00	-50	FL349	3:39	24.8N	155.1W	FL348	-47.4	1.9	FL349	-47.7	1.0	3:50
SFO-HNL	9/ 9/77	48	4:16	-52	FL360	1:24	33.2N	136.6W	FL357	-47.8	4.2	FL360	-48.6	2.2	3:51
SFO-HNL	9/11/77	49	4:11	-54	FL360	0:15	36.6N	126.6W	FL357	-49.8	4.1	FL360	-50.6	2.5	3:51
SFO-HNL	9/11/77	40	4:05	-56	FL360	2:09	30.1N	143.7W	FL358	-52.4	3.5	FL360	-53.1	2.4	3:45
SFO-HNL	9/13/77	40	4:05	-57	FL359	0:39	35.5N	130.1W	FL356	-53.2	3.9	FL359	-54.0	2.3	3:39
SFO-HNL	9/13/77	44	3:59	-58	FL360	1:34	32.4N	138.5W	FL357	-53.7	4.0	FL359	-54.3	2.5	3:44
SFO-HNL	9/13/77	23	1:54	-55	FL360	0:00	30.5N	142.8W	FL359	-50.8	2.8	FL360	-51.2	1.9	1:49
SFO-HNL	9/15/77	49	4:14	-57	FL361	1:10	34.2N	133.9W	FL358	-51.6	4.0	FL360	-52.2	3.2	3:59
SFO-HNL	9/15/78	47	3:55	-51	FL360	2:15	29.4N	145.1W	FL355	-48.7	4.9	FL360	-49.9	.8	3:35
SFO-HNL	9/17/77	46	3:44	-53	FL360	0:05	36.8N	125.8W	FL359	-49.3	1.6	FL359	-49.4	1.1	3:39
SFO-HNL	9/17/77	50	4:05	-56	FL360	0:45	35.5N	130.2W	FL358	-52.3	3.5	FL360	-52.9	2.0	3:55
SFO-HNL	9/19/77	44	3:46	-47	FL321	0:05	36.8N	125.7W	FL320	-41.5	2.0	FL320	-41.4	2.0	0:00
SFO-HNL	9/22/77	44	3:39	-56	FL363	0:15	36.5N	126.7W	FL325	-42.3	5.7	FL320	-40.3	2.3	2:54
SFO-HNL	9/24/77	34	3:54	-51	FL361	2:39	28.2N	147.4W	FL355	-48.3	5.2	FL360	-49.9	.8	3:34
SFO-HNL	9/24/78	48	4:15	-54	FL360	0:09	36.5N	126.9W	FL359	-50.8	3.5	FL362	-51.5	1.9	3:45
SFO-HNL	9/26/77	36	4:04	-51	FL361	0:00	36.6N	126.6W	FL361	-48.8	1.0	FL360	-48.8	1.0	4:04
SFO-HNL	9/30/77	49	4:14	-50	FL360	2:30	29.6N	144.8W	FL358	-47.1	2.7	FL360	-47.5	1.3	4:04
SFO-HNL	10/ 2/77	31	4:05	-54	FL360	0:39	35.2N	131.0W	FL355	-49.5	5.4	FL359	-50.6	2.6	3:34

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----				-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-HNL	10/ 4/76	47	3:44	-50	FL351	0:09	35.7N	126.3W	FL348	-48.0	2.1	FL350	-48.4	.9	3:30				
SFO-HNL	10/ 4/77	47	3:59	-56	FL360	0:20	36.1N	128.3W	FL360	-52.2	3.0	FL360	-52.3	3.0	3:54				
SFO-HNL	10/ 4/78	47	3:49	-53	FL361	0:40	35.1N	131.3W	FL358	-50.3	2.2	FL360	-50.7	1.2	3:34				
SFO-HNL	10/ 6/77	46	4:00	-53	FL361	0:54	35.0N	131.7W	FL358	-50.2	2.6	FL360	-50.7	1.3	3:45				
SFO-HNL	10/ 7/78	47	3:52	-55	FL361	0:34	35.6N	129.7W	FL357	-52.6	3.6	FL360	-53.3	1.4	3:37				
SFO-HNL	10/10/77	51	4:09	-55	FL361	0:30	35.9N	128.9W	FL358	-51.7	3.5	FL361	-52.2	2.0	3:54				
SFO-HNL	10/14/76	52	3:39	-52	FL350	1:42	30.5N	140.5W	FL349	-49.3	2.2	FL350	-49.5	2.0	0:00				
SFO-HNL	10/14/78	52	4:15	-56	FL389	3:15	27.1N	151.3W	FL356	-49.4	3.1	FL349	-49.1	2.0	3:00				
SFO-HNL	10/19/78	46	3:45	-57	FL359	0:09	36.5N	127.0W	FL357	-49.7	3.7	FL359	-50.1	3.4	3:30				
SFO-HNL	10/22/76	45	3:49	-56	FL360	0:35	35.4N	130.2W	FL357	-52.8	3.1	FL360	-53.3	1.5	3:34				
SFO-HNL	10/27/78	49	4:00	-51	FL349	2:15	28.9N	143.9W	FL347	-47.6	2.8	FL349	-48.0	2.0	3:45				
SFO-HNL	10/30/76	46	3:54	-46	FL317	0:05	36.9N	125.5W	FL319	-42.2	1.9	FL319	-42.2	1.9	3:49				
SFO-HNL	10/31/78	51	3:51	-59	FL360	1:15	33.0N	137.1W	FL358	-52.6	4.3	FL359	-53.0	3.8	3:36				
SFO-HNL	11/ 6/78	56	4:03	-59	FL393	3:15	24.7N	151.7W	FL361	-50.7	5.4	FL350	-48.1	2.8	2:54				
SFO-HNL	11/ 7/78	48	3:47	-51	FL350	0:09	35.9N	125.6W	FL344	-47.0	4.5	FL350	-48.3	1.5	3:26				
SFO-HNL	11/ 8/76	50	4:03	-54	FL350	0:45	37.9N	132.0W	FL345	-49.0	4.7	FL349	-50.4	1.8	3:38				
SFO-HNL	11/ 8/78	47	4:00	-54	FL360	2:54	27.0N	149.5W	FL357	-50.5	4.1	FL359	-51.3	1.3	3:45				
SFO-HNL	11/12/76	53	4:17	-55	FL388	3:00	27.1N	147.5W	FL357	-48.6	5.1	FL348	-46.8	1.3	2:34	FL388	-54.8	.4	1:12
SFO-HNL	11/19/76	49	4:03	-52	FL350	0:09	35.9N	125.3W	FL348	-48.2	4.1	FL350	-48.6	3.2	3:53				
SFO-HNL	11/19/77	48	4:09	-55	FL350	0:09	35.9N	125.3W	FL346	-50.0	5.5	FL350	-51.1	2.8	3:55				
SFO-HNL	11/24/76	48	4:04	-53	FL360	0:15	36.5N	126.8W	FL355	-55.1	4.9	FL360	-56.4	1.6	3:45				
SFO-HNL	11/24/78	51	4:00	-58	FL360	0:15	36.3N	127.4W	FL359	-55.7	2.6	FL360	-56.0	2.1	3:50				
SFO-HNL	11/25/77	49	4:09	-55	FL361	1:00	34.7N	132.5W	FL356	-51.5	5.0	FL361	-52.6	2.4	3:50				
SFO-HNL	11/27/76	46	4:07	-54	FL350	0:15	35.7N	126.3W	FL347	-51.0	3.4	FL349	-51.7	1.4	3:42				
SFO-HNL	12/ 2/76	46	3:54	-63	FL397	1:49	31.3N	141.0W	FL380	-56.7	3.4	FL360	-57.0	1.1	1:35	FL400	-57.0	3.2	2:00
SFO-HNL	12/ 3/76	46	3:46	-58	FL360	0:48	34.6N	132.9W	FL359	-54.3	3.3	FL360	-54.5	3.2	3:37				
SFO-HNL	12/ 3/76	48	4:00	-55	FL350	0:10	36.0N	125.1W	FL347	-49.6	4.1	FL350	-50.1	3.1	3:44				
SFO-HNL	12/ 3/77	48	4:09	-48	FL360	0:20	36.4N	127.1W	FL358	-45.1	3.4	FL360	-45.8	.9	3:24				
SFO-HNL	12/ 4/78	48	3:54	-53	FL350	2:05	29.3N	143.1W	FL347	-46.3	4.4	FL350	-47.1	2.8	3:39				
SFO-HNL	12/ 7/76	50	4:04	-61	FL381	1:15	33.7N	135.2W	FL386	-56.3	3.6	FL381	-58.8	.8	1:45	FL401	-55.1	1.8	1:49
SFO-HNL	12/ 9/78	47	3:50	-48	FL311	0:05	35.9N	125.4W	FL311	-43.6	2.9	FL310	-43.5	2.9	3:45				
SFO-HNL	12/10/76	48	3:56	-57	FL360	0:12	36.4N	127.0W	FL358	-49.4	5.0	FL359	-49.4	5.0	3:44				
SFO-HNL	12/10/77	53	4:25	-53	FL351	0:15	36.1N	126.0W	FL348	-49.4	3.8	FL350	-50.0	2.7	4:09				
SFO-HNL	12/11/78	41	4:14	-56	FL351	0:04	36.2N	125.7W	FL349	-53.0	2.3	FL349	-53.2	2.0	4:09				
SFO-HNL	12/14/76	49	4:09	-53	FL360	0:15	36.5N	126.7W	FL357	-49.1	2.9	FL360	-49.5	2.0	3:54				
SFO-HNL	12/16/76	48	4:04	-41	FL320	2:24	29.5N	144.9W	FL282	-34.8	3.1	FL280	-36.1	1.3	2:15	FL280	-32.1	3.2	1:34
SFO-HNL	12/16/76	50	4:17	-55	FL350	0:10	37.6N	126.8W	FL349	-46.8	3.6	FL350	-46.9	3.5	4:07				
SFO-HNL	12/16/76	52	4:24	-53	FL351	0:14	35.8N	125.9W	FL348	-46.4	4.7	FL350	-46.7	4.5	4:09				
SFO-HNL	12/16/78	47	3:54	-62	FL360	1:39	32.6N	138.1W	FL358	-57.9	4.3	FL359	-58.4	3.5	3:45				
SFO-HNL	12/17/78	49	4:08	-60	FL360	1:58	31.9N	139.6W	FL358	-54.7	3.5	FL359	-55.0	3.0	3:59				
SFO-HNL	12/18/77	55	4:40	-57	FL360	1:54	32.7N	137.7W	FL360	-51.1	3.6	FL359	-51.8	3.0	3:30				
SFO-HNL	12/19/77	59	5:03	-58	FL358	1:18	36.4N	133.8W	FL365	-51.3	4.8	FL350	-56.8	.4	1:03	FL372	-49.8	3.8	3:34
SFO-HNL	12/22/76	48	4:00	-61	FL360	1:00	34.2N	133.8W	FL359	-55.7	3.7	FL359	-55.8	3.7	3:49				
SFO-HNL	12/22/78	51	4:09	-54	FL360	0:15	36.6N	126.3W	FL357	-50.0	2.5	FL359	-50.2	2.0	3:59				
SFO-HNL	12/24/76	49	4:00	-57	FL350	0:09	35.9N	125.7W	FL346	-49.9	3.6	FL349	-50.0	3.5	3:49				
SFO-HNL	12/26/75	51	3:57	-54	FL350	2:10	29.8N	142.6W	FL325	-46.9	4.8	FL310	-44.3	.5	1:54	FL350	-51.9	1.3	1:36
SFO-HNL	12/26/76	47	4:09	-55	FL350	1:39	31.9N	137.3W	FL347	-51.2	4.5	FL350	-52.1	1.8	3:54				
SFO-HNL	12/26/78	56	4:34	-38	FL350	0:10	37.8N	125.7W	FL348	-47.9	3.5	FL350	-48.1	3.2	4:24				
SFO-HNL	12/28/78	51	4:09	-54	FL350	1:39	31.4N	138.4W	FL347	-47.7	3.0	FL350	-47.8	2.6	3:49				
SFO-HNL	12/28/78	47	4:04	-59	FL340	0:20	36.3N	127.5W	FL349	-45.4	5.5	FL360	-43.6	1.8	2:24				
SFO-HNL	12/29/76	48	4:04	-63	FL361	0:50	35.2N	130.9W	FL356	-57.9	4.5	FL360	-58.7	2.5	3:45				
SFO-HNL	12/29/77	37	3:09	-58	FL350	0:00	35.4N	133.6W	FL350	-49.7	4.0	FL350	-49.7	4.0	3:09				
SFO-HNL	12/30/75	45	3:54	-56	FL349	0:09	37.8N	126.0W	FL347	-53.8	3.5	FL350	-54.5	1.1	3:45				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-HNL	12/30/78	57	4:59	-59	FL361	0:24	36.3N	127.6W	FL358	-52.4	4.6	FL360	-52.7	4.5	4:39				
SFO-HNL	12/31/78	54	4:24	-61	FL360	0:15	36.6N	126.3W	FL358	-50.5	6.3	FL361	-50.9	6.1	4:04				
SFO-JFK	1/ 4/77	42	3:45	-54	FL310	0:05	38.3N	119.6W	FL365	-47.4	2.0	FL370	-47.1	1.4	3:19				
SFO-JFK	1/ 7/79	38	3:05	-62	FL365	3:05	41.5N	76.1W	FL370	-54.0	4.2	FL369	-54.0	4.2	3:05				
SFO-JFK	1/11/79	46	3:45	-62	FL371	1:35	41.2N	101.6W	FL368	-56.2	5.2	FL370	-58.8	2.0	2:20				
SFO-JFK	1/21/79	190	3:51	-63	FL370	1:21	41.2N	104.8W	FL373	-54.1	6.5	FL369	-57.8	4.7	2:05				
SFO-JFK	1/25/77	38	3:45	-60	FL371	0:42	39.6N	112.5W	FL393	-51.8	4.5	FL410	-49.2	3.1	1:58				
SFO-JFK	1/25/79	48	3:54	-57	FL370	2:30	41.8N	91.4W	FL365	-48.6	5.3	FL370	-49.9	4.5	3:20				
SFO-JFK	1/30/77	29	3:39	-61	FL356	0:00	38.4N	119.3W	FL391	-52.1	4.2	FL410	-49.7	2.2	1:53				
SFO-JFK	2/ 6/77	49	3:58	-67	FL410	0:04	38.3N	119.9W	FL408	-53.1	5.1	FL410	-53.3	5.1	3:50				
SFO-JFK	2/28/79	50	4:07	-67	FL371	0:21	38.8N	116.8W	FL376	-61.2	5.0	FL370	-62.8	4.3	2:43				
SFO-JFK	3/ 4/77	36	3:40	-64	FL370	0:00	38.2N	118.5W	FL372	-50.2	4.4	FL370	-51.2	4.3	2:30				
SFO-JFK	3/12/78	54	3:59	-63	FL364	3:54	41.3N	75.9W	FL378	-54.3	4.2	FL370	-54.0	3.1	2:24	FL410	-55.5	.5	1:07
SFO-JFK	3/19/77	41	3:25	-54	FL362	0:00	38.3N	119.4W	FL393	-46.5	3.4	FL369	-49.1	2.4	1:09	FL409	-44.7	2.0	1:54
SFO-JFK	3/23/77	45	3:45	-63	FL370	0:35	40.6N	113.9W	FL369	-55.6	6.7	FL370	-60.0	1.2	2:19				
SFO-JFK	4/ 3/77	48	4:15	-56	FL330	1:39	40.3N	106.8W	FL329	-52.0	2.6	FL329	-52.1	2.5	4:09				
SFO-JFK	4/14/76	54	4:02	-70	FL410	3:07	42.7N	86.2W	FL413	-58.1	6.0	FL409	-58.0	6.6	2:58				
SFO-JFK	4/15/78	45	3:49	-58	FL344	0:04	38.5N	119.6W	FL367	-53.6	3.6	FL370	-53.9	3.5	3:29				
SFO-JFK	4/16/76	49	4:05	-69	FL410	3:15	42.4N	85.5W	FL407	-55.8	9.2	FL410	-56.0	9.3	3:50				
SFO-JFK	4/18/76	48	3:59	-70	FL426	3:59	41.6N	76.1W	FL419	-56.8	7.2	FL410	-51.3	1.0	2:06	FL431	-62.7	6.1	1:04
SFO-JFK	4/20/76	53	3:59	-69	FL410	3:24	42.4N	82.3W	FL407	-57.1	6.3	FL410	-57.3	6.4	3:45				
SFO-JFK	4/23/78	46	3:48	-63	FL370	1:03	40.7N	108.5W	FL368	-54.6	5.6	FL370	-55.0	5.1	3:34				
SFO-JFK	4/30/77	46	4:00	-64	FL410	2:15	42.4N	96.8W	FL384	-57.7	4.3	FL369	-59.0	1.2	1:50	FL410	-57.7	4.8	1:35
SFO-JFK	5/ 8/77	48	3:52	-66	FL410	1:09	40.6N	108.4W	FL405	-58.6	6.4	FL409	-59.4	6.1	3:31				
SFO-JFK	5/11/77	27	4:00	-62	FL410	2:36	42.0N	92.2W	FL384	-55.0	4.0	FL369	-56.4	2.6	1:36	FL409	-55.4	2.8	1:20
SFO-JFK	5/19/77	62	4:19	-61	FL390	2:44	44.2N	92.9W	FL362	-52.5	5.6	FL370	-52.3	5.1	1:49	FL369	-55.8	.7	1:19
SFO-JFK	5/20/78	47	3:54	-63	FL410	2:15	42.1N	95.7W	FL389	-57.5	4.5	FL390	-58.1	.6	1:09	FL409	-59.1	2.3	1:34
SFO-JFK	5/22/77	25	3:51	-62	FL371	0:55	40.4N	110.7W	FL368	-58.1	3.6	FL370	-58.7	2.2	3:45				
SFO-JFK	5/27/78	49	4:03	-57	FL371	1:27	41.3N	104.7W	FL369	-52.4	2.8	FL370	-53.4	2.8	1:15	FL370	-53.2	.9	2:15
SFO-JFK	6/ 7/79	45	3:39	-54	FL370	2:35	42.4N	88.5W	FL362	-47.9	5.5	FL370	-50.0	3.3	2:53				
SFO-JFK	6/13/78	45	3:42	-57	FL385	2:12	41.7N	94.4W	FL383	-52.6	4.4	FL370	-55.1	.8	1:57	FL410	-49.6	4.0	1:15
SFO-JFK	6/17/78	44	3:39	-56	FL371	0:35	39.8N	112.6W	FL362	-50.9	5.8	FL370	-52.7	1.6	3:09				
SFO-JFK	6/26/78	44	3:35	-55	FL370	0:30	39.5N	114.0W	FL368	-49.4	3.8	FL370	-49.7	3.6	3:19				
SFO-JFK	7/ 3/77	48	4:01	-61	FL410	0:54	40.4N	110.9W	FL403	-57.4	3.4	FL409	-58.8	1.0	3:45				
SFO-JFK	7/13/78	46	3:40	-57	FL410	3:30	41.5N	78.2W	FL375	-49.4	5.1	FL370	-48.9	.9	2:30				
SFO-JFK	7/27/78	50	3:55	-56	FL370	2:40	42.4N	91.1W	FL365	-50.1	5.7	FL369	-51.5	2.6	3:29				
SFO-JFK	7/31/78	45	3:45	-57	FL371	2:24	42.9N	91.7W	FL368	-50.2	5.6	FL370	-51.2	2.5	2:45				
SFO-JFK	8/ 6/78	59	4:25	-54	FL370	2:39	42.0N	90.6W	FL364	-50.1	3.2	FL369	-51.7	.8	3:19				
SFO-JFK	8/10/78	206	3:47	-61	FL410	3:43	41.5N	77.9W	FL383	-54.2	3.4	FL371	-52.2	1.5	1:23				
SFO-JFK	8/11/78	44	3:39	-59	FL390	3:34	41.6N	78.3W	FL376	-51.9	3.5	FL370	-52.0	1.7	1:49	FL389	-53.1	2.6	1:30
SFO-JFK	8/12/78	48	3:54	-59	FL393	1:20	41.4N	105.9W	FL387	-54.6	3.5	FL391	-55.4	2.5	3:10				
SFO-JFK	8/13/78	50	3:57	-55	FL370	0:31	39.5N	113.9W	FL368	-51.4	3.4	FL371	-52.4	.7	2:25				
SFO-JFK	8/14/77	42	3:45	-59	FL410	0:19	39.3N	117.1W	FL406	-56.8	3.9	FL410	-57.7	1.4	3:30				
SFO-JFK	8/14/78	48	3:54	-54	FL371	0:19	38.5N	116.6W	FL366	-48.9	3.9	FL370	-49.7	2.6	1:49	FL370	-50.1	2.2	1:30
SFO-JFK	8/15/77	41	3:34	-52	FL370	3:14	42.3N	80.1W	FL367	-49.3	3.2	FL370	-50.1	1.0	3:19				
SFO-JFK	8/22/77	39	3:35	-62	FL390	2:39	42.5N	87.3W	FL369	-51.9	6.4	FL370	-51.9	2.0	1:50	FL389	-57.8	2.9	1:05
SFO-JFK	9/12/77	42	3:40	-56	FL371	1:30	42.0N	103.3W	FL367	-52.7	2.9	FL370	-53.4	1.2	3:24				
SFO-JFK	9/22/78	47	3:49	-59	FL391	2:00	41.8N	99.6W	FL384	-54.9	4.2	FL370	-55.1	.4	1:30	FL409	-56.2	1.1	1:20
SFO-JFK	10/ 2/77	23	3:39	-55	FL369	0:05	38.4N	119.7W	FL384	-50.3	2.8	FL369	-55.8	2.2	2:04				
SFO-JFK	10/ 7/78	48	4:05	-59	FL370	2:20	42.3N	95.5W	FL372	-51.9	4.3	FL370	-54.5	2.1	2:15	FL389	-49.5	2.8	1:19
SFO-JFK	10/17/77	51	4:19	-62	FL410	1:39	41.4N	103.9W	FL402	-55.5	5.2	FL410	-56.4	4.8	3:39				
SFO-JFK	10/17/78	46	3:45	-61	FL409	1:45	41.6N	100.7W	FL391	-56.9	4.3	FL409	-58.1	1.4	2:20				
SFO-JFK	10/18/78	211	3:57	-61	FL381	3:57	41.3N	77.4W	FL386	-55.5	2.4	FL369	-55.3	2.3	2:08	FL408	-55.9	.8	1:24

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----									
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM		
SFO-JFK	10/26/78	45	3:39	-53	FL369	1:45	42.7N	100.5W	FL366	-48.6	3.3	FL369	-49.0	2.7	3:19						
SFO-JFK	10/31/77	48	3:59	-55	FL350	0:34	39.5N	114.9W	FL346	-50.9	3.1	FL349	-51.0	2.8	3:24						
SFO-JFK	11/ 7/78	49	4:04	-58	FL370	1:19	40.3N	107.1W	FL364	-54.2	5.6	FL370	-55.8	2.4	3:35						
SFO-JFK	11/11/77	49	3:59	-64	FL370	2:08	41.8N	96.6W	FL381	-52.4	7.4	FL370	-58.0	2.3	2:20	FL410	-44.1	2.5	1:08		
SFO-JFK	11/24/77	47	3:54	-64	FL389	1:29	41.1N	104.6W	FL374	-56.4	4.7	FL389	-60.9	2.1	1:05	FL369	-54.8	1.3	2:00		
SFO-JFK	12/ 8/78	43	3:34	-54	FL356	0:09	38.2N	118.9W	FL366	-49.8	4.0	FL369	-50.0	3.6	3:14						
SFO-JFK	12/ 9/78	45	3:39	-59	FL370	0:15	38.2N	117.8W	FL365	-50.6	5.0	FL369	-50.8	4.7	3:19						
SFO-JFK	12/10/78	48	3:55	-62	FL370	0:25	39.0N	116.5W	FL365	-51.4	5.4	FL370	-51.7	4.9	3:29						
SFO-JFK	12/17/78	23	1:48	-61	FL370	1:00	42.3N	85.1W	FL362	-53.9	6.1	FL370	-55.2	5.5	1:39						
SFO-JFK	12/19/76	46	3:49	-56	FL345	0:00	38.3N	120.9W	FL415	-52.1	2.4	FL409	-51.5	2.7	1:45	FL429	-52.3	1.9	1:39		
SFO-JFK	12/21/76	47	3:50	-67	FL390	0:25	40.6N	116.5W	FL398	-56.9	5.4	FL390	-61.0	3.5	1:35	FL409	-52.8	3.6	1:50		
SFO-JFK	12/26/76	46	3:49	-69	FL410	1:30	41.8N	103.4W	FL406	-59.9	7.2	FL410	-60.5	6.8	3:35						
SFO-JFK	12/26/78	47	3:49	-59	FL356	0:05	38.3N	119.7W	FL366	-52.9	4.6	FL370	-53.3	3.9	3:35						
SFO-JFK	12/28/76	46	3:53	-67	FL391	1:07	43.2N	109.4W	FL394	-53.5	7.3	FL409	-48.0	2.6	2:06						
SFO-LHR	5/ 1/79	102	8:43	-63	FL370	1:15	46.5N	112.7W	FL380	-51.0	6.0	FL370	-51.6	6.6	5:09	FL389	-56.3	1.5	1:13		
SFO-LHR	5/ 8/79	101	8:43	-59	FL370	3:49	55.6N	77.1W	FL386	-50.7	2.8	FL409	-46.8	2.4	1:50						
SFO-LHR	6/10/77	96	8:38	-62	FL410	6:30	63.8N	29.3W	FL391	-49.8	6.0	FL369	-49.2	1.9	2:09	FL369	-50.4	4.5	1:45		
SFO-LHR	6/12/77	96	8:46	-61	FL391	1:41	45.8N	104.3W	FL394	-50.0	6.0	FL409	-51.9	7.7	3:34	FL390	-45.9	1.9	2:24		
SFO-LHR	6/12/79	101	8:26	-58	FL370	2:05	53.2N	103.4W	FL386	-49.2	5.4	FL370	-52.8	5.1	4:08	FL409	-48.0	3.4	4:00		
SFO-LHR	6/13/78	104	8:33	-58	FL370	7:14	58.1N	16.3W	FL340	-46.6	5.4	FL410	-50.0	6.4	3:49	FL410	-46.0	1.3	3:52		
SFO-LHR	6/14/77	93	8:49	-61	FL410	6:49	61.5N	26.8W	FL382	-51.2	5.5	FL330	-46.6	1.1	1:15	FL310	-44.1	1.3	1:34		
SFO-LHR	6/15/77	101	8:48	-60	FL371	2:39	51.4N	92.8W	FL386	-51.4	6.0	FL369	-49.4	6.7	3:39						
SFO-LHR	6/17/77	106	8:59	-61	FL391	0:49	42.0N	112.7W	FL396	-51.3	4.4	FL369	-50.1	5.8	5:39	FL410	-53.4	3.8	2:49		
SFO-LHR	6/19/77	97	8:59	-63	FL391	1:15	48.4N	116.9W	FL394	-51.9	5.6	FL370	-51.5	5.9	4:39	FL409	-51.6	5.6	3:29		
SFO-LHR	6/21/77	100	9:17	-60	FL370	0:49	41.5N	113.4W	FL391	-51.6	6.0	FL390	-52.0	4.7	4:09	FL409	-50.3	3.8	3:49		
SFO-LHR	6/24/77	104	8:59	-61	FL371	4:04	63.7N	85.2W	FL384	-50.7	5.9	FL390	-51.9	6.2	6:04	FL410	-51.8	1.5	2:19		
SFO-LHR	6/26/77	97	8:38	-59	FL370	1:44	51.9N	112.3W	FL385	-48.2	5.2	FL369	-57.0	1.5	2:27	FL390	-49.5	1.2	1:15		
SFO-LHR	6/28/77	98	8:49	-56	FL370	1:24	49.7N	115.7W	FL385	-47.6	4.2	FL409	-49.2	5.5	4:49						
SFO-LHR	7/24/78	111	9:04	-59	FL350	3:24	51.2N	82.8W	FL358	-48.1	4.0	FL370	-55.2	3.7	4:39	FL410	-45.1	1.3	3:24		
SFO-LHR	8/16/78	97	8:05	-57	FL370	6:25	59.9N	26.3W	FL345	-46.8	5.2	FL370	-50.9	4.9	4:48	FL410	-44.8	2.1	3:09		
SFO-LHR	8/31/77	104	9:21	-59	FL370	4:51	52.7N	61.2W	FL350	-45.5	5.5	FL370	-51.5	2.3	2:39	FL390	-45.5	3.7	3:04		
SFO-LHR	9/ 2/77	102	8:34	-56	FL330	2:29	51.9N	91.3W	FL338	-47.8	4.7	FL410	-46.6	1.6	2:10						
SFO-LHR	9/10/78	81	8:24	-54	FL331	4:30	65.0N	65.3W	FL334	-49.3	3.9	FL330	-48.1	1.5	2:19	FL350	-52.4	4.9	1:54		
SFO-LHR	10/10/78	100	8:39	-58	FL371	8:29	54.0N	2.4W	FL331	-50.1	4.2	FL330	-47.0	2.3	2:00	FL389	-45.6	1.4	1:49		
SFO-LHR	10/17/77	100	9:13	-57	FL351	5:43	69.0N	48.6W	FL329	-49.2	7.0	FL330	-47.2	2.9	3:30	FL370	-48.7	5.5	3:24		
SFO-LHR	10/28/77	618	10:37	-67	FL387	10:34	52.3N	2.0E	FL388	-54.2	3.7	FL330	-42.9	1.7	2:07	FL350	-51.5	2.8	1:14		
SFO-NRT	1/ 1/79	107	9:05	-59	FL330	3:25	52.9N	159.7W	FL327	-49.4	5.5	FL369	-46.9	4.3	4:40						
SFO-NRT	1/25/79	111	9:29	-65	FL370	2:24	48.1N	144.7W	FL392	-50.2	6.5	FL330	-50.0	3.2	5:39	FL369	-44.8	3.8	2:00		
SFO-NRT	2/20/79	114	9:24	-60	FL351	0:39	43.4N	126.8W	FL348	-49.3	5.9	FL330	-49.3	3.6	6:31						
SFO-NRT	3/13/79	111	9:09	-61	FL351	4:39	54.4N	177.3W	FL342	-47.7	6.8	FL330	-50.5	3.0	6:49						
SFO-NRT	4/29/79	112	8:58	-64	FL404	8:49	37.7N	142.8E	FL385	-62.6	5.6	FL290	-42.9	3.2	2:15	FL350	-53.2	4.3	5:24		
												FL349	-53.2	2.4	1:10	FL369	-53.0	1.8	3:17		
												FL409	-55.1	3.3	4:04						
												FL330	-50.2	5.4	7:50						
												FL370	-58.7	4.8	2:14	FL390	-46.7	3.1	2:09		
												FL409	-47.8	4.6	4:34						
												FL350	-49.0	5.9	8:39						
												FL330	-49.2	6.4	2:54	FL350	-46.6	7.1	5:34		
												FL369	-57.6	4.2	1:38	FL390	-47.2	3.9	2:42		
												FL410	-54.1	2.4	2:45						

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-NRT	5/ 6/79	119	9:45		-62	FL370	6:44	50.9N	161.9E	FL351	-52.1	6.7	FL331	-51.1	4.5	2:20	FL350	-47.7	4.2	3:08
SFO-NRT	5/31/78	113	9:39		-54	FL370	5:34	55.2N	173.0E	FL346	-46.2	4.9	FL370	-58.7	1.4	1:41	FL390	-60.6	1.5	1:15
SFO-NRT	6/19/78	113	9:17		-60	FL370	4:18	54.0N	169.7W	FL356	-52.5	4.8	FL330	-46.1	4.0	4:00	FL370	-46.8	6.0	4:00
SFO-NRT	7/ 3/78	110	9:04		-55	FL371	4:49	57.6N	178.4W	FL352	-45.5	4.9	FL330	-49.3	1.6	1:54	FL369	-55.5	3.0	3:04
SFO-NRT	10/13/78	108	9:09		-58	FL371	4:54	53.6N	178.1E	FL349	-46.8	5.0	FL390	-54.5	1.4	1:00	FL350	-44.1	3.9	1:54
SFO-NRT	10/24/78	111	9:29		-63	FL371	6:28	51.3N	163.3E	FL350	-50.8	8.4	FL310	-41.8	1.5	1:30	FL390	-49.6	1.8	2:04
SFO-NRT	11/ 5/78	114	9:49		-64	FL350	5:39	55.8N	175.3E	FL331	-46.9	7.3	FL370	-47.9	4.4	2:10	FL350	-47.7	2.0	1:15
SFO-OKA	2/ 9/79	139	11:53		-68	FL370	5:05	57.7N	177.1W	FL371	-54.5	6.8	FL310	-42.7	1.7	1:05	FL330	-49.7	2.8	2:06
SFO-OKA	4/ 9/79	146	12:24		-63	FL389	6:50	32.2N	173.7E	FL374	-55.6	2.9	FL370	-48.3	5.0	4:50	FL370	-58.6	4.0	2:55
SFO-OKA	12/10/78	149	12:29		-58	FL411	11:59	30.9N	130.2E	FL375	-52.4	2.6	FL310	-40.2	3.7	1:30	FL329	-46.5	2.5	2:19
SFO-OKA	12/24/78	138	11:49		-64	FL370	5:24	47.0N	179.5W	FL374	-54.0	4.3	FL350	-51.1	2.7	1:15	FL369	-59.6	6.5	4:00
SFO-ORD	1/ 5/78	30	2:35		-68	FL370	2:00	42.1N	97.8W	FL363	-62.4	5.5	FL390	-58.6	1.4	1:10	FL370	-56.3	3.3	2:49
SFO-ORD	1/ 8/79	34	2:45		-68	FL371	0:15	38.5N	118.3W	FL383	-57.7	6.8	FL309	-53.0	1.8	2:39	FL350	-50.8	3.0	1:54
SFO-ORD	1/14/78	36	3:10		-64	FL371	1:00	40.9N	108.0W	FL349	-54.9	6.5	FL410	-53.8	2.3	2:25	FL390	-52.0	1.1	3:24
SFO-ORD	1/24/76	29	2:26		-56	FL317	0:00	38.4N	119.8W	FL366	-51.5	2.2	FL350	-56.4	2.6	3:14	FL370	-58.3	4.2	2:00
SFO-ORD	1/24/78	36	2:55		-58	FL331	0:50	39.4N	112.0W	FL328	-53.1	3.0	FL370	-64.0	2.6	2:15				
SFO-ORD	1/26/79	32	2:35		-54	FL310	0:00	38.3N	119.8W	FL365	-45.2	2.8	FL409	-53.2	2.1	1:20				
SFO-ORD	1/28/76	34	2:45		-62	FL371	0:54	41.6N	111.6W	FL369	-56.9	6.6	FL370	-60.1	3.4	1:35				
SFO-ORD	2/16/78	32	2:39		-63	FL371	0:15	38.6N	117.9W	FL381	-54.0	3.3	FL369	-51.3	2.1	2:10				
SFO-ORD	2/20/78	36	2:59		-66	FL370	0:09	38.6N	118.9W	FL363	-56.7	7.8	FL330	-53.5	2.7	2:45				
SFO-ORD	3/ 1/78	31	2:35		-67	FL371	1:35	41.5N	103.6W	FL366	-60.8	6.3	FL370	-60.1	3.3	2:05				
SFO-ORD	3/26/77	32	2:29		-58	FL370	1:55	42.1N	99.1W	FL366	-54.6	3.7	FL370	-56.2	2.6	1:15				
SFO-ORD	3/31/78	36	2:46		-55	FL331	0:15	38.8N	117.9W	FL328	-52.0	2.7	FL370	-57.3	7.9	2:34				
SFO-ORD	4/ 1/75	32	2:34		-57	FL371	0:09	38.5N	118.6W	FL364	-48.5	2.8	FL369	-55.3	2.5	2:19				
SFO-ORD	4/ 5/75	29	1:59		-63	FL371	0:17	39.5N	114.0W	FL365	-60.1	3.8	FL330	-52.6	1.0	2:31				
SFO-ORD	4/ 6/77	33	2:43		-64	FL396	1:57	41.9N	99.9W	FL377	-57.6	4.3	FL370	-49.7	2.4	2:15				
SFO-ORD	4/ 8/75	32	2:28		-59	FL342	2:09	40.5N	94.3W	FL333	-50.6	4.0	FL369	-61.4	1.7	1:41				
SFO-ORD	4/10/78	35	2:50		-57	FL371	2:45	42.4N	91.1W	FL352	-49.2	4.6	FL370	-58.3	3.1	1:45				
SFO-ORD	4/11/77	34	2:42		-66	FL409	2:37	42.4N	92.5W	FL375	-57.2	4.9	FL330	-48.7	2.6	2:04				
SFO-ORD	4/15/76	41	2:35		-64	FL390	2:24	42.3N	93.3W	FL369	-51.4	6.6	FL370	-49.0	4.4	1:39				
SFO-ORD	4/15/77	34	2:54		-65	FL390	2:20	42.0N	97.1W	FL366	-57.9	6.1	FL369	-55.8	2.8	1:30				
SFO-ORD	4/26/78	31	2:40		-61	FL370	2:20	42.2N	94.4W	FL359	-55.1	5.2	FL370	-50.0	4.7	1:30				
SFO-ORD	4/28/76	32	2:37		-64	FL410	1:57	41.9N	98.2W	FL381	-59.5	4.1	FL370	-58.4	1.8	1:50				
SFO-ORD	4/28/77	32	2:39		-60	FL370	1:24	41.3N	105.1W	FL362	-56.8	4.8	FL369	-57.0	3.3	2:05				
SFO-ORD	5/ 3/77	24	2:34		-60	FL370	1:09	40.9N	107.2W	FL362	-54.8	6.1	FL370	-59.0	1.1	1:11				
SFO-ORD	5/ 7/78	32	2:39		-59	FL370	0:19	38.6N	116.4W	FL365	-50.2	4.8	FL369	-58.3	1.3	2:20				
SFO-ORD	5/15/78	31	2:39		-56	FL370	0:40	41.2N	111.9W	FL365	-53.2	4.4	FL370	-56.8	2.3	2:04				
SFO-ORD	5/24/78	31	2:34		-57	FL370	1:18	41.3N	105.2W	FL362	-51.1	6.1	FL369	-50.7	4.3	2:24				
SFO-ORD	6/ 5/78	34	2:45		-58	FL371	2:20	40.6N	95.7W	FL362	-52.8	5.4	FL370	-54.2	1.0	2:19				
SFO-ORD	6/12/75	34	2:45		-59	FL371	0:34	39.6N	114.0W	FL366	-56.5	3.3	FL369	-52.6	4.3	2:11				
SFO-ORD	6/12/78	32	2:35		-56	FL371	0:15	38.6N	117.6W	FL363	-52.3	6.0	FL370	-54.4	2.6	2:20				
													FL370	-57.4	1.8	2:24				
													FL371	-54.1	1.8	2:15				

APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----					-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM		T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SFO-ORD	6/12/79	34	2:37		-57	FL370	2:15	43.3N	94.7W	FL364	-53.0	3.4	FL370	-53.9	1.3	2:13				
SFO-ORD	6/24/77	35	2:50		-56	FL370	1:45	41.9N	103.2W	FL361	-52.6	6.5	FL369	-54.9	.5	2:25				
SFO-ORD	6/25/78	46	3:28		-52	FL370	0:21	38.3N	116.1W	FL363	-48.7	3.7	FL370	-49.7	1.0	3:01				
SFO-ORD	6/30/79	32	2:37		-55	FL370	0:24	39.4N	115.0W	FL361	-52.0	4.6	FL370	-53.8	.8	2:07				
SFO-ORD	7/ 5/77	32	2:40		-53	FL363	0:08	38.7N	118.6W	FL364	-48.8	5.4	FL369	-50.0	1.3	2:21				
SFO-ORD	7/11/78	32	2:35		-57	FL410	1:20	41.6N	104.9W	FL381	-50.8	6.5								
SFO-ORD	7/13/77	30	2:34		-52	FL362	0:09	38.6N	118.7W	FL363	-50.2	4.6	FL370	-51.6	.5	2:05				
SFO-ORD	7/27/77	29	2:30		-50	FL370	0:15	38.6N	117.6W	FL362	-46.3	4.3	FL370	-47.6	1.2	2:09				
SFO-ORD	8/15/78	32	2:33		-51	FL371	1:15	39.3N	105.4W	FL368	-48.2	4.3	FL370	-49.7	.8	1:34				
SFO-ORD	9/ 7/75	28	2:20		-57	FL370	1:55	42.3N	97.7W	FL367	-51.7	3.9	FL370	-52.4	2.9	2:09				
SFO-ORD	9/10/77	28	2:30		-52	FL369	1:54	42.1N	97.7W	FL361	-49.2	4.9	FL369	-50.9	.6	2:04				
SFO-ORD	9/16/77	30	2:34		-58	FL369	2:24	42.4N	92.8W	FL359	-53.8	5.7	FL369	-56.0	1.0	2:09				
SFO-ORD	9/19/75	32	2:41		-51	FL371	1:15	40.9N	104.1W	FL365	-47.0	3.6	FL371	-48.0	2.2	2:19				
SFO-ORD	9/21/78	29	2:30		-58	FL370	0:21	38.8N	116.7W	FL358	-50.9	7.1	FL370	-54.5	2.3	1:50				
SFO-ORD	9/23/78	32	2:45		-55	FL371	0:15	38.7N	117.7W	FL363	-52.7	4.7	FL370	-54.3	.5	2:24				
SFO-ORD	10/13/78	34	2:45		-69	FL409	1:15	40.7N	108.0W	FL391	-55.3	8.0	FL408	-57.7	7.6	1:49				
SFO-ORD	10/16/78	129	2:41		-59	FL370	0:45	39.8N	112.7W	FL368	-57.0	2.9	FL369	-57.4	.9	2:26				
SFO-ORD	10/25/78	51	4:04		-52	FL369	3:09	42.4N	89.2W	FL351	-48.0	2.1	FL329	-47.3	1.0	1:30	FL369	-48.9	2.0	2:09
SFO-ORD	12/ 2/77	32	2:40		-56	FL390	1:30	41.1N	104.3W	FL385	-51.0	3.8	FL389	-53.3	1.7	1:04				
SFO-ORD	12/ 4/78	35	2:49		-46	FL331	0:59	39.6N	109.3W	FL344	-42.3	2.3	FL330	-42.1	2.0	1:24				
SFO-ORD	12/ 9/76	33	2:32		-66	FL392	1:28	41.2N	105.4W	FL381	-58.4	5.2	FL390	-59.7	4.6	1:37				
SFO-ORD	12/ 9/77	31	2:29		-61	FL370	1:34	41.8N	102.2W	FL364	-56.4	5.1	FL370	-57.5	3.6	2:09				
SFO-ORD	12/21/78	33	2:39		-62	FL391	1:24	40.9N	104.9W	FL370	-56.3	4.7	FL389	-57.3	2.5	1:10				
SFO-ORD	12/27/78	32	2:35		-66	FL370	1:50	41.9N	99.8W	FL363	-59.3	5.2	FL370	-60.7	3.3	2:15				
SFO-SEA	3/25/76	13	1:00		-65	FL374	0:05	39.5N	122.3W	FL383	-61.1	3.8								
SFO-TPE	11/27/78	155	13:09		-66	FL370	5:24	54.0N	179.2E	FL372	-52.8	5.7	FL349	-48.0	5.3	3:00	FL369	-54.5	4.4	4:49
													FL410	-56.4	2.2	3:35				
													FL350	-56.7	1.1	1:09				
SFO-YVR	1/23/78	17	1:19		-59	FL350	0:04	39.7N	122.3W	FL347	-56.0	2.5								
SFO-YVR	2/26/78	15	1:00		-53	FL304	0:59	47.8N	122.9W	FL376	-48.7	1.7								
SFO-YVR	4/10/77	14	1:05		-63	FL376	0:05	39.7N	122.1W	FL383	-57.2	3.3								
SFO-YVR	9/18/77	13	1:01		-62	FL391	0:41	44.8N	123.1W	FL372	-55.4	7.3								
SFO-YVR	10/ 5/77	14	1:05		-48	FL310	0:15	38.7N	127.9W	FL304	-45.1	3.1								
SFO-YVR	10/ 9/77	14	1:10		-63	FL391	0:10	40.4N	122.4W	FL381	-60.1	6.7								
SIN-BAH	5/26/77	74	6:19		-43	FL351	5:34	24.3N	58.1E	FL325	-35.6	4.8	FL310	-32.1	.7	3:35	FL350	-41.6	.7	2:20
SIN-BAH	6/21/77	41	5:30		-38	FL351	3:16	18.4N	70.7E	FL330	-33.9	3.3	FL310	-30.9	1.6	3:01				
SIN-BAH	8/ 6/77	69	5:55		-39	FL351	3:39	17.7N	71.8E	FL326	-34.0	3.4	FL310	-31.5	1.0	3:24	FL350	-38.0	.7	2:15
SIN-BAH	8/23/77	69	6:00		-38	FL351	3:45	18.3N	71.6E	FL325	-33.2	3.4	FL310	-30.8	1.0	3:20	FL350	-37.4	.7	2:15
SIN-BAH	8/31/77	73	6:05		-40	FL350	2:42	13.2N	80.0E	FL334	-36.0	3.5	FL310	-32.0	.8	2:27	FL350	-38.7	1.0	3:22
SIN-BAH	10/13/77	69	6:19		-45	FL351	5:19	23.4N	60.4E	FL349	-42.9	2.1	FL350	-43.0	.4	2:34	FL351	-43.5	.8	3:19
SIN-BAH	10/16/77	40	4:34		-46	FL350	4:29	25.7N	53.3E	FL350	-43.4	1.2	FL349	-43.4	1.2	4:34				
SIN-BAH	12/20/77	79	6:58		-46	FL350	6:13	22.6N	56.0E	FL317	-34.6	7.8	FL279	-25.5	2.2	1:59	FL310	-31.8	.6	2:00
													FL349	-43.4	2.0	2:33				
													FL310	-31.9	.8	1:30	FL350	-43.3	.9	4:15
SIN-BAH	12/29/77	68	6:09		-44	FL350	1:49	6.0N	86.1E	FL339	-40.1	5.4								
SIN-BKK	1/16/77	13	1:09		-44	FL351	0:30	7.0N	102.0E	FL342	-41.1	6.2								
SIN-BKK	1/30/77	15	1:09		-44	FL350	0:59	11.1N	100.5E	FL341	-40.8	5.5								
SIN-BKK	2/13/77	13	1:04		-43	FL350	0:04	4.5N	103.0E	FL343	-40.8	3.9								
SIN-BKK	2/21/77	16	1:11		-44	FL350	0:09	4.4N	103.0E	FL342	-41.4	5.7								
SIN-BKK	3/27/77	10	1:00		-43	FL350	0:25	7.2N	101.9E	FL345	-40.6	3.3								
SIN-BKK	5/14/77	12	1:00		-33	FL311	0:35	8.8N	101.3E	FL310	-31.9	.5								
SIN-BKK	5/20/77	13	1:09		-44	FL351	0:19	5.8N	102.7E	FL343	-40.7	5.7								
SIN-BKK	5/29/77	15	1:05		-44	FL350	0:29	7.8N	101.8E	FL346	-41.4	2.7								
SIN-BKK	6/ 9/77	14	1:09		-43	FL351	0:19	5.9N	102.4E	FL343	-40.2	5.0								
SIN-BKK	7/15/77	13	1:00		-25	FL280	0:04	4.8N	102.9E	FL280	-24.0	.7								











APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----					-----MEAN-----			-----FLIGHT SEGMENTS-----							
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
SYD-HNL	9/18/77	92	8:26	-55	FL330	0:12	32.0S	156.0E	FL341	-42.2	5.8	FL330	-39.3	4.8	5:50	FL370	-48.2	.7	0:00
SYD-HNL	9/21/77	91	8:14	-50	FL371	6:08	4.8N	168.0W	FL340	-43.5	4.8	FL290	-41.2	3.1	1:05	FL330	-39.5	1.6	3:48
SYD-HNL	9/23/77	84	8:22	-50	FL370	5:27	.2N	170.6W	FL342	-42.8	5.3	FL370	-49.3	.5	3:00	FL369	-49.0	.3	2:54
SYD-HNL	9/25/77	61	7:54	-50	FL371	5:54	3.7N	168.7W	FL348	-43.8	4.6	FL329	-39.9	1.7	4:12	FL370	-48.6	1.1	3:25
SYD-HNL	10/ 5/77	87	7:54	-49	FL330	0:40	28.8S	162.5E	FL343	-42.6	2.3	FL331	-42.0	4.0	2:10	FL351	-42.8	.8	5:04
SYD-HNL	10/ 9/77	103	8:28	-50	FL331	1:00	28.8S	162.9E	FL342	-43.2	4.8	FL330	-39.3	3.2	3:59	FL370	-48.4	.9	3:18
SYD-KUL	12/17/76	81	6:46	-43	FL330	0:34	30.5S	144.0E	FL341	-40.6	2.0	FL329	-39.6	3.1	1:49	FL350	-41.4	.7	4:06
SYD-LAX	1/ 1/78	155	12:22	-61	FL420	12:07	33.4N	122.9W	FL377	-50.5	6.4	FL330	-46.4	2.5	1:30	FL349	-42.1	1.0	2:07
SYD-LAX	1/ 7/79	141	12:04	-61	FL410	11:54	31.6N	120.7W	FL372	-49.0	6.2	FL369	-47.3	.8	2:30	FL390	-54.4	.5	2:10
SYD-LAX	1/14/79	133	11:20	-59	FL390	11:15	33.3N	120.9W	FL373	-49.5	4.9	FL419	-57.5	1.6	2:19	FL370	-47.5	.6	4:09
SYD-LAX	1/21/79	140	12:00	-59	FL411	10:00	23.3N	139.5W	FL380	-49.9	6.4	FL350	-41.8	1.0	2:30	FL409	-58.4	1.2	2:19
SYD-LAX	4/15/79	146	11:59	-66	FL430	10:24	26.0N	133.5W	FL382	-53.1	7.4	FL390	-53.9	1.0	1:34	FL371	-48.1	.5	1:45
SYD-LAX	5/ 4/79	146	12:24	-65	FL411	12:04	30.9N	122.3W	FL377	-52.5	6.1	FL350	-42.9	1.3	1:15	FL388	-54.1	1.2	5:14
SYD-LAX	6/ 2/78	151	12:35	-64	FL410	12:05	30.1N	123.6W	FL375	-54.5	5.4	FL370	-47.2	.4	1:25	FL370	-48.3	.6	3:00
SYD-LAX	6/ 4/78	144	12:11	-65	FL410	9:02	22.1N	148.7W	FL377	-53.6	7.2	FL330	-40.1	2.2	1:20	FL410	-55.6	1.7	3:39
SYD-LAX	6/15/79	141	12:05	-62	FL410	10:30	24.0N	132.0W	FL377	-53.1	5.5	FL390	-53.0	1.5	2:50	FL350	-44.8	.4	1:04
SYD-LAX	7/23/78	146	12:04	-61	FL411	7:54	10.0N	147.0W	FL382	-52.9	6.6	FL330	-41.8	3.6	1:35	FL390	-55.5	.5	1:39
SYD-LAX	8/ 4/78	154	12:44	-62	FL410	9:44	16.4N	140.7W	FL376	-53.3	5.7	FL410	-59.8	1.9	3:13	FL429	-60.7	1.7	1:29
SYD-LAX	8/25/78	143	12:11	-61	FL410	12:06	33.7N	121.6W	FL377	-52.5	6.3	FL330	-45.2	1.3	2:39	FL370	-49.8	1.2	4:45
SYD-LAX	10/ 8/78	137	12:02	-62	FL410	9:07	15.6N	141.5W	FL377	-53.0	5.7	FL410	-59.4	2.2	4:39	FL370	-51.7	1.3	3:19
SYD-LAX	10/29/78	144	12:32	-62	FL411	9:27	16.4N	140.7W	FL378	-53.9	4.6	FL330	-48.3	2.8	2:40	FL410	-63.1	.6	2:24
SYD-LAX	11/26/77	135	12:37	-63	FL409	12:27	32.0N	120.6W	FL383	-52.7	5.8	FL390	-55.9	1.0	3:14	FL351	-46.5	.6	2:04
SYD-LAX	12/ 4/77	117	10:05	-59	FL410	8:53	26.8N	128.3W	FL382	-51.2	4.7	FL330	-42.8	.6	1:14	FL389	-58.2	.7	2:37
SYD-LAX	12/17/78	140	12:19	-64	FL410	12:14	31.9N	120.9W	FL374	-52.8	6.2	FL370	-50.3	.6	2:15	FL420	-61.5	.9	1:39
SYD-LAX	12/24/77	142	12:03	-60	FL410	8:18	13.5N	152.2W	FL383	-51.6	5.8	FL410	-63.7	.8	1:19	FL350	-46.0	1.0	1:30
SYD-MNL	1/ 1/77	74	6:19	-44	FL350	4:50	1.6N	127.3E	FL342	-40.6	2.4	FL369	-49.7	.8	3:19	FL390	-54.6	.8	2:17
SYD-MNL	1/ 4/77	71	6:14	-46	FL330	0:49	26.6S	144.4E	FL338	-41.2	2.9	FL410	-60.8	1.2	3:00	FL370	-50.0	1.1	3:54
SYD-MNL	2/26/77	74	6:14	-43	FL350	4:34	.6N	128.5E	FL333	-37.7	5.1	FL391	-55.9	.3	1:54	FL411	-59.4	1.2	4:04
SYD-MNL	8/17/76	79	6:27	-45	FL351	3:29	8.0S	134.0E	FL336	-41.4	3.3	FL330	-48.1	3.5	2:44	FL370	-49.7	.6	4:05
												FL409	-60.2	.9	3:44	FL371	-50.5	.7	3:15
												FL330	-42.9	5.2	2:19	FL409	-59.2	.6	3:04
												FL390	-55.8	.4	2:56	FL368	-48.9	.6	1:34
												FL330	-50.3	2.0	1:07	FL389	-55.4	.8	2:44
												FL370	-49.4	.6	1:40	FL371	-48.7	.6	2:15
												FL409	-60.5	1.2	2:54	FL411	-59.8	1.0	3:00
												FL350	-50.9	3.4	2:19	FL390	-53.2	.7	1:03
												FL390	-55.4	.7	3:02	FL369	-47.9	.3	3:09
												FL370	-48.1	.7	4:19	FL410	-57.1	1.1	2:31
												FL409	-58.9	1.4	4:46	FL369	-50.5	.9	2:55
												FL350	-44.8	1.7	1:19	FL410	-60.7	1.2	3:20
												FL390	-53.3	1.3	2:24	FL369	-46.6	.6	1:30
												FL330	-46.1	3.1	2:19	FL410	-56.6	2.2	4:29
												FL390	-54.9	.9	2:19	FL350	-41.9	.6	4:14
												FL350	-43.1	1.1	1:19	FL350	-41.7	.8	3:44
												FL390	-54.1	.5	2:45	FL350	-41.8	.8	3:24
												FL330	-39.3	1.3	1:10	FL350	-43.8	.7	3:52
												FL330	-40.8	3.8	1:30				
												FL310	-32.2	3.2	2:29				
												FL310	-37.4	2.2	2:14				











APPENDIX B  
FLIGHT SUMMARY

-----FLIGHT DATA-----				-----COLDEST OBSERVATION-----				-----MEAN-----			-----FLIGHT SEGMENTS-----								
ROUTE	MO/DY/YR	OBS	ETIM	T	FL	ETIM	LAT	LONG	FL	T	SD	FL	T	SD	ETIM	FL	T	SD	ETIM
YVR-SFO	4/11/77	14	1:04	-62	FL370	0:25	44.4N	122.8W	FL361	-59.6	3.9								
YVR-SFO	9/19/77	13	1:00	-61	FL370	0:08	46.6N	122.9W	FL363	-54.9	5.1								
YYZ-ORD	12/29/78	30	1:22	-63	FL386	0:15	43.1N	83.3W	FL313	-52.0	6.4								

## APPENDIX C

### Static Air Temperature Climatology

The grid used to present the temperature climatology consists of  $5^{\circ}$  latitude,  $30^{\circ}$  longitude and 2000 feet vertical resolution. Climatologies are presented from FL270 to FL430 for each month of the year. The mean and standard deviation for the N statistically independent temperature observations are given for each grid box. In addition, the empirical 98, 50, 16, 2 and .3 probability percentiles are presented where the numbers presented represent the temperature for which the probability is X% that the temperature will be colder than the given member. All tabulated temperatures are given in tenths of degrees celsius ( $10 * ^{\circ}\text{C}$ ).

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY

FL 270

LAT.

70 N						70 N
60						60
50						50
40						40
30	-445 5 -450 2 -440 -445 -446 -450			-418 31 -489 12 -382 -405 -452 -483		30
20	-402 29 -440 6 -361 -410 -424 -438			-350 57 -400 3 -274 -380 -394 -399		20
10	-362 33 -419 9 -320 -370 -390 -415	-350 17 -370 5 -322 -350 -364 -369		-250 1		10
0	-315 15 -330 2 -301 -315 -325 -329	-320 1	-235 31 -290 8 -201 -225 -275 -289	-240 1	-272 38 -358 38 -215 -270 -311 -345	0
10		-275 18 -300 4 -251 -275 -290 -299	-270 1	-230 1	-254 29 -318 11 -214 -240 -280 -312	10
20				-225 25 -250 2 -201 -225 -242 -249		20
30						30
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

JANUARY  
FL 270

MEAN LAT

LAT.   
TABULATED TEMPERATURES = °C \* 10

70 N									70 N
60									60
					-470	1		-470	1
				-430	1	-490 59 -589 10 -387 -495 -546 -583	-470 46 -559 9 -405 -450 -507 -552	-478 54 -588 20 -388 -485 -539 -579	
50	-450	1		-420	1	-410	1		
								-471 19 -500 7 -442 -470 -490 -499	-458 27 -500 10 -412 -460 -486 -498
	-410 50 -460 2 -362 -410 -444 -458	-450 28 -490 5 -412 -460 -471 -488	-424 47 -517 54 -340 -440 -470 -500					-434 31 -480 10 -384 -435 -466 -478	-427 45 -516 71 -340 -440 -470 -500
40	-394 32 -468 53 -330 -390 -420 -460	-397 17 -420 3 -380 -390 -410 -419	-360 40 -400 2 -322 -360 -387 -398						-398 34 -486 72 -330 -400 -430 -466
	-366 23 -390 9 -316 -370 -387 -390	-379 39 -458 35 -300 -380 -416 -446							-378 39 -457 53 -281 -380 -417 -440
30									
									-351 39 -419 15 -270 -350 -385 -412
		-280	1						-268 40 -357 51 -200 -270 -310 -340
20									
									-258 27 -319 17 -216 -250 -280 -314
		-285 15 -300 2 -271 -285 -295 -299	-260 15 -280 6 -240 -265 -272 -279						-258 26 -299 10 -207 -265 -276 -296
10			-265 9 -280 4 -260 -260 -270 -279						-265 9 -280 4 -260 -260 -270 -279
									-238 16 -260 5 -220 -230 -254 -259
0									
									-230 10 -240 2 -220 -230 -237 -240
10									
									-218 24 -259 10 -182 -220 -240 -256
20									
				-245 21 -280 4 -230 -235 -261 -278					-240 22 -280 9 -203 -240 -257 -277
									-276 9 -280 5 -260 -270 -280 -280
30									
									-284 28 -339 39 -230 -290 -310 -332
									-303 25 -340 7 -271 -300 -330 -339
40 S									40 S
150W	120W	90W	60W	30W	0	30E			

LONGITUDE

70 N							70 N
60							60
50							50
40	-483 26 -520 3 -460 -470 -504 -518						40
	-482 46 -560 10 -424 -465 -541 -558			-446 40 -519 16 -358 -445 -476 -514			
30	-453 32 -490 8 -401 -465 -480 -489			-420 1			30
	-402 27 -450 9 -362 -410 -424 -447	-403 5 -410 3 -400 -400 -407 -410				-270 1	
20	-362 28 -390 5 -314 -370 -384 -389	-332 25 -370 5 -302 -320 -357 -368	-303 29 -350 4 -271 -295 -326 -347			-311 45 -408 27 -246 -300 -360 -400	20
		-305 14 -320 6 -282 -305 -320 -320		-250 1		-285 27 -358 14 -260 -275 -309 -347	
10		-302 12 -320 6 -282 -300 -312 -319	-300 24 -330 3 -271 -300 -320 -329	-290 1		-259 12 -270 8 -240 -260 -270 -270	10
		-293 17 -310 3 -271 -300 -307 -310				-250 12 -260 4 -231 -255 -260 -260	
0			-290 17 -310 6 -262 -290 -310 -310			-240 -240 -240 -240	0
			-280 6 -290 6 -271 -280 -282 -289			-240 1	
10			-285 5 -290 6 -280 -285 -290 -290				10
			-277 5 -280 3 -270 -280 -280 -280	-280 1			
20			-300 1	-280 1	-278 23 -320 6 -251 -275 -296 -317	-290 1	20
	-300 1		-295 15 -310 2 -281 -295 -305 -309		-315 55 -370 2 -262 -315 -352 -368		
30	-250 1		-315 5 -320 2 -310 -315 -318 -320		-357 33 -380 3 -313 -380 -380 -380		30
			-320 1	-338 45 -400 6 -281 -335 -392 -399	-315 31 -379 20 -280 -310 -359 -372		
40 S				-337 32 -399 14 -300 -335 -370 -395	-370 37 -400 4 -314 -385 -400 -400		40 S
30E	60E	90E	120E	150E	180W	150W	

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 290

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N

60

50

40

30

20

10

0

10

20

30

40S

				-620	1		-620 1
				-525 50 -590 11	-489 40 -569 13	-506 48 -589 24	
				-452 -520 -574 -588	-435 -470 -531 -563	-439 -495 -570 -585	
	-467 17 -490 3	-460 1	-490 1		-510 36 -559 20	-502 37 -559 25	
	-450 -460 -480 -489				-430 -515 -540 -556	-430 -510 -540 -555	
	-450 30 -480 5	-463 28 -510 12	-473 38 -539 50		-488 41 -559 19	-474 38 -555 89	
	-403 -450 -480 -480	-422 -465 -487 -510	-400 -480 -510 -530		-440 -490 -531 -553	-400 -480 -510 -540	
	-436 37 -499 35	-439 33 -500 13	-440 1		-453 19 -480 3	-445 40 -558 78	
	-357 -440 -470 -493	-385 -440 -462 -498			-440 -440 -467 -478	-355 -445 -480 -539	
	-440 25 -470 4	-422 42 -520 29			-460 20 -480 2	-431 40 -520 44	
	-402 -445 -460 -469	-347 -420 -455 -520			-441 -460 -474 -479	-356 -430 -470 -520	
	-280 1	-370 20 -390 2				-383 47 -449 16	
		-351 -370 -384 -389				-273 -400 -410 -444	
		-280 1				-318 43 -408 42	
						-255 -310 -370 -394	
		-325 5 -330 2				-292 27 -358 23	
		-320 -325 -328 -330				-254 -290 -320 -347	
		-300 16 -320 3	-322 20 -350 5			-292 28 -348 26	
		-281 -300 -314 -319	-292 -330 -337 -348			-240 -295 -320 -340	
			-316 14 -330 5			-288 32 -330 12	
			-292 -320 -324 -329			-234 -295 -320 -328	
						-278 26 -310 8	
						-240 -285 -308 -310	
						-274 15 -290 7	
						-244 -280 -280 -289	
						-285 5 -290 6	
						-280 -285 -290 -290	
						-278 4 -280 4	
						-271 -280 -280 -280	
						-282 20 -320 9	
						-252 -280 -297 -317	
			-310 1			-305 34 -369 6	
						-262 -305 -322 -364	
						-325 45 -380 6	
						-256 -315 -380 -380	
						-321 35 -399 27	
						-280 -320 -360 -395	
						-344 36 -400 18	
						-300 -340 -386 -400	

150W

120W

90W

60W

30W

0

30E

LONGITUDE

FL 310

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

70 N

50

30

10

10

50

40

LONGITUDE

156



## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 310

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

				-560	1	-549 36 -600 11 -494 -560 -590 -598	-550 34 -600 12 -494 -560 -590 -598
	-500 50 -569 3 -460 -470 -538 -566			-525 15 -540 2 -511 -525 -535 -539		-542 36 -618 18 -483 -550 -573 -610	-544 53 -600 9 -463 -570 -597 -600
	-507 47 -570 7 -428 -500 -560 -569	-538 8 -550 4 -530 -535 -545 -549	-470 1	-473 45 -539 11 -422 -460 -528 -556		-512 44 -579 9 -452 -520 -550 -575	-533 29 -570 4 -501 -530 -560 -569
	-486 20 -520 5 -462 -480 -501 -518	-505 16 -530 17 -479 -510 -520 -527	-491 43 -560 53 -420 -500 -540 -560	-470 30 -500 2 -441 -470 -490 -499		-517 28 -560 6 -490 -505 -552 -559	-496 37 -560 87 -420 -500 -532 -560
	-477 38 -539 41 -390 -480 -510 -532	-480 46 -559 22 -400 -485 -526 -552	-515 5 -520 2 -510 -515 -518 -520				-487 43 -567 97 -399 -490 -536 -560
	-455 33 -519 22 -404 -470 -480 -512	-464 46 -539 24 -369 -470 -506 -535					-463 45 -556 64 -353 -470 -500 -537
	-430 57 -480 8 -307 -450 -469 -479	-380 1					-444 49 -520 40 -329 -450 -488 -520
	-430 -430 -430 -430	-350 1					-359 39 -430 69 -294 -360 -410 -430
		-370 1	-380 1				-351 22 -416 33 -306 -350 -370 -394
			-356 22 -380 8 -314 -360 -379 -380				-339 27 -407 31 -300 -340 -370 -392
			-350 -350 -350 -350	-360 1			-326 19 -359 32 -266 -330 -350 -354
				-340 -340 -340 -340	2		-323 20 -350 26 -290 -325 -350 -350
				-320 -320 -320 -320	2		-314 11 -330 16 -293 -315 -320 -330
				-330 -330 -330 -330	2		-325 14 -359 13 -310 -330 -331 -355
				-325 5 -330 2 -320 -325 -328 -330	2		-328 18 -360 9 -302 -320 -347 -358
				-354 16 -380 5 -332 -350 -367 -378	5		-326 30 -379 21 -270 -330 -350 -376
				-330 1			-337 24 -389 13 -310 -330 -360 -383
							-345 37 -419 13 -280 -360 -371 -410
							-376 29 -430 35 -327 -370 -400 -430
							-393 32 -430 20 -324 -400 -420 -430

150W

120W

90W

60W

30W

0

30E

LONGITUDE

## APPENDIX C

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

# STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY

FL 330

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N		-550 1	-577 17 -600 3 -560 -570 -590 -599	-567 5 -570 3 -560 -570 -570 -570	-560 1		-568 14 -599 8 -551 -565 -570 -596	70 N
60		-565 15 -580 2 -551 -565 -575 -579		-548 33 -599 4 -512 -540 -571 -596	-555 30 -590 4 -521 -555 -585 -589		-554 30 -600 10 -512 -545 -586 -598	60
50		-540 1	-580 1	-574 50 -630 17 -493 -590 -624 -630	-623 55 -690 18 -523 -625 -680 -690		-589 62 -690 40 -486 -600 -640 -690	50
40	-503 25 -530 3 -472 -510 -524 -529	-530 43 -570 4 -464 -545 -565 -569	-490 10 -500 2 -480 -490 -497 -500	-571 46 -639 18 -483 -590 -613 -637	-592 44 -659 27 -505 -590 -650 -655	-580 30 -629 4 -551 -570 -601 -626	-561 55 -658 72 -448 -565 -616 -650	40
30	-539 34 -570 7 -468 -550 -560 -569	-515 65 -580 2 -453 -515 -559 -577	-534 34 -599 13 -485 -520 -571 -595	-553 40 -620 15 -477 -550 -588 -620	-583 30 -620 4 -542 -585 -610 -619	-587 21 -629 11 -560 -580 -604 -626	-550 42 -628 60 -460 -550 -596 -620	30
20	-550 20 -580 5 -522 -550 -567 -578	-529 30 -570 16 -476 -535 -560 -570	-523 35 -615 55 -460 -520 -554 -589	-530 14 -540 6 -503 -535 -540 -540	-550 1	-568 25 -609 12 -524 -570 -590 -606	-534 37 -617 116 -460 -540 -570 -600	20
10	-513 41 -588 64 -400 -520 -550 -580	-498 47 -579 32 -389 -500 -540 -574	-500 49 -560 3 -442 -500 -541 -558			-590 1	-513 53 -615 159 -370 -520 -560 -607	10
0	-496 48 -560 51 -380 -510 -530 -560	-506 45 -579 18 -417 -500 -553 -577					-497 51 -577 92 -380 -510 -540 -562	0
10 S	-465 53 -560 35 -380 -470 -510 -560	-450 36 -520 13 -410 -440 -501 -518					-458 53 -560 85 -367 -470 -510 -553	10 S
20 S	-445 55 -539 4 -410 -415 -482 -533	-431 23 -480 14 -403 -420 -459 -477					-408 42 -534 101 -340 -400 -450 -510	20 S
30 S		-432 15 -460 10 -412 -430 -446 -458	-420 1				-412 28 -469 27 -370 -410 -440 -465	30 S
40 S		-420 13 -440 5 -410 -410 -434 -439	-418 19 -440 6 -391 -420 -440 -440				-407 20 -440 23 -380 -410 -430 -440	40 S
			-405 11 -420 4 -391 -405 -415 -419	-370 1			-387 15 -419 23 -359 -390 -400 -416	
			-398 15 -410 5 -380 -410 -410 -410				-384 19 -419 27 -340 -380 -400 -415	
			-387 9 -400 3 -380 -380 -394 -399				-382 22 -430 27 -350 -380 -400 -430	
			-400 1				-375 23 -430 37 -347 -370 -400 -430	
							-373 18 -420 40 -350 -370 -390 -420	
				-390 1			-374 24 -429 42 -336 -375 -394 -422	
							-384 34 -458 54 -320 -390 -415 -449	
							-402 40 -477 57 -295 -410 -440 -460	
							-418 29 -490 61 -360 -420 -440 -488	
							-443 31 -489 38 -360 -450 -470 -483	

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 350

LAT.

[illegible]

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 350

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-503 -76 -620 6 -441 -455 -604 -618						-503 -76 -620 6 -441 -455 -604 -618	70 N
60	-525 80 -630 8 -431 -515 -609 -627	-552 66 -640 9 -455 -580 -620 -637			-630 1		-544 75 -639 18 -433 -575 -623 -637	60
50	-521 62 -610 8 -460 -500 -590 -607	-583 41 -640 12 -512 -585 -632 -640	-569 41 -639 21 -498 -570 -610 -636	-560 47 -639 8 -486 -555 -599 -634	-592 40 -670 19 -544 -580 -632 -670	-577 48 -659 9 -496 -590 -610 -652	-567 57 -660 57 -461 -570 -620 -660	50
40	-534 62 -620 20 -440 -555 -590 -620	-555 50 -620 4 -484 -560 -596 -617	-566 43 -620 28 -485 -580 -610 -620	-586 32 -630 24 -582 -615 -630 -639	-613 22 -640 4 -582 -615 -630 -639	-591 62 -670 17 -480 -620 -640 -667	-568 54 -667 104 -440 -580 -620 -640	40
30	-563 61 -648 28 -415 -590 -607 -634	-538 49 -600 26 -445 -560 -590 -600	-530 44 -610 84 -447 -530 -580 -603	-556 13 -570 7 -532 -560 -570 -570		-585 44 -640 24 -499 -595 -623 -640	-544 54 -644 186 -437 -550 -600 -640	30
20	-547 49 -620 89 -400 -560 -590 -620	-552 49 -628 28 -442 -560 -600 -619	-500 65 -600 6 -431 -480 -576 -597			-557 68 -640 3 -474 -560 -614 -637	-543 58 -640 171 -404 -560 -600 -630	20
10	-525 52 -600 107 -421 -530 -580 -600	-519 38 -580 17 -456 -510 -564 -577					-516 58 -600 155 -401 -530 -580 -600	10
0	-495 54 -607 86 -400 -500 -550 -593	-499 23 -540 9 -463 -500 -517 -537					-492 55 -606 146 -400 -490 -550 -591	0
10 S	-450 44 -539 25 -385 -450 -490 -535	-489 22 -530 10 -455 -480 -511 -528	-490 490 -490 2 -490 -490 -490 -490				-450 44 -581 158 -380 -440 -499 -549	10 S
20 S	-452 7 -460 6 -441 -450 -460 -460	-483 17 -510 10 -454 -480 -501 -510	-478 18 -500 4 -460 -475 -495 -499				-461 25 -510 44 -419 -460 -490 -510	20 S
30 S	-443 5 -450 6 -440 -440 -450 -450	-470 1 -443 -470 -480 -487	-467 15 -490 14 -443 -470 -480 -487	-435 5 -440 2 -430 -435 -438 -440			-452 18 -489 36 -420 -450 -474 -483	30 S
40 S	-440 -440 -440 3 -440 -440 -440 -440	-455 11 -470 4 -441 -455 -465 -469	-450 1 -441 -455 -465 -469				-439 13 -469 27 -420 -440 -450 -465	40 S
		-464 10 -480 5 -451 -460 -474 -479	-467 5 -470 3 -480 -470 -470 -470	-465 5 -470 2 -460 -465 -468 -470			-437 18 -479 29 -410 -430 -460 -474	
		-460 1 -460 -460 -470 -470	-460 10 -470 4 -450 -460 -470 -470	-463 8 -470 4 -451 -465 -470 -470			-427 19 -470 37 -400 -420 -450 -470	
			-470 -470 -470 -470	-470 -470 -470 -470			-423 19 -470 44 -399 -420 -440 -470	
				-460 1 -460 -460 -470 -470			-427 23 -470 45 -389 -430 -460 -470	
							-430 31 -490 51 -380 -420 -470 -490	
							-438 33 -490 47 -388 -430 -480 -490	
							-460 34 -528 58 -391 -465 -490 -520	
							-480 27 -529 37 -427 -480 -510 -523	

161

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY

FL 370

LAT.

70 N							
						-551 54 -620 7 -466 -560 -610 -619	70 N
60						-478 18 -500 4 -452 -480 -490 -499	60
						-488 58 -627 24 -405 -470 -543 -612	
50						-514 41 -608 18 -440 -515 -550 -596	50
						-511 56 -638 21 -410 -510 -558 -628	
						-481 31 -520 12 -432 -480 -512 -520	50
						-640 42 -670 3 -584 -670 -670 -670	
40						-516 61 -620 12 -434 -520 -580 -618	40
						-585 63 -670 4 -512 -580 -646 -667	
	-590 20 -610 2 -571 -590 -604 -609					-495 37 -550 15 -428 -490 -540 -547	
						-475 33 -584 41 -428 -470 -506 -550	
	-565 17 -580 6 -533 -570 -580 -580					-480 68 -580 6 -421 -440 -572 -579	
30						-472 12 -500 16 -453 -470 -480 -497	30
						-459 14 -489 21 -434 -460 -470 -486	
	-571 10 -580 7 -552 -570 -580 -580	-551 35 -600 7 -495 -540 -590 -599				-440 1	
						-479 16 -500 16 -453 -480 -496 -500	
	-580 1					-470 1	
20						-504 51 -610 36 -444 -490 -562 -610	20
						-485 49 -608 71 -400 -480 -540 -592	
						-463 13 -489 18 -440 -460 -473 -487	
						-471 11 -489 23 -450 -470 -480 -486	
10						-475 13 -508 29 -456 -480 -490 -499	10
						-476 14 -500 31 -446 -480 -490 -500	
						-473 15 -508 27 -445 -470 -490 -500	
0						-473 12 -490 14 -453 -480 -480 -490	0
						-467 9 -480 3 -460 -460 -474 -479	
10						-475 17 -490 6 -443 -480 -490 -490	10
						-468 16 -480 5 -442 -480 -480 -480	
						-483 5 -490 3 -480 -480 -487 -490	
20						-460 8 -470 3 -450 -460 -467 -470	20
						-474 17 -490 8 -450 -480 -490 -490	
						-457 12 -470 3 -441 -460 -467 -470	
						-472 27 -510 9 -425 -470 -497 -508	
						-470 1	
30						-494 36 -530 7 -440 -520 -520 -529	30
						-496 31 -549 21 -434 -500 -520 -546	
						-515 13 -540 6 -501 -510 -524 -538	
						-528 31 -570 13 -460 -540 -552 -570	
40 S						-517 46 -570 7 -445 -540 -560 -569	40 S
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-533 59 -600 4 -445 -545 -581 -598	-617 52 -670 6 -520 -630 -654 -668					-533 59 -600 4 -445 -545 -581 -598	70 N
60	-558 61 -678 14 -455 -560 -590 -670	-576 46 -610 7 -481 -600 -600 -609		-650 1	-530 10 -540 2 -520 -530 -537 -540		-569 63 -679 27 -455 -580 -637 -675	60
50	-557 67 -660 11 -438 -570 -612 -660	-548 82 -659 6 -425 -560 -628 -656	-530 52 -600 5 -462 -550 -574 -597	-626 55 -689 24 -479 -645 -670 -685	-633 43 -699 31 -560 -640 -672 -694	-558 63 -640 5 -472 -580 -614 -637	-575 76 -697 116 -433 -570 -660 -690	50
40	-576 76 -660 16 -435 -610 -646 -657		-578 44 -620 5 -506 -580 -620 -620	-630 28 -688 33 -566 -630 -659 -677	-633 39 -690 12 -572 -635 -680 -688	-566 20 -600 5 -542 -560 -581 -598	-593 68 -690 86 -437 -615 -650 -683	40
30	-581 81 -670 24 -405 -605 -646 -670	-552 63 -678 69 -450 -540 -620 -663	-557 56 -648 54 -451 -560 -620 -639	-589 46 -640 9 -506 -620 -627 -638	-607 36 -650 10 -537 -605 -640 -648	-589 52 -660 12 -493 -590 -642 -658	-581 65 -674 196 -420 -570 -620 -670	30
20	-554 60 -650 81 -406 -560 -612 -650	-559 65 -680 91 -418 -570 -620 -656	-556 67 -620 16 -440 -590 -620 -620			-530 1	-538 67 -680 253 -420 -540 -610 -650	20
10	-554 56 -640 153 -420 -570 -610 -630	-532 53 -638 18 -447 -515 -580 -626	-520 43 -580 3 -481 -500 -554 -577				-536 60 -640 218 -430 -560 -600 -630	10
0	-529 59 -620 130 -410 -530 -590 -620	-535 15 -550 2 -521 -535 -545 -549	-525 25 -550 2 -501 -525 -542 -549				-523 56 -620 201 -410 -530 -590 -610	0
10 S	-506 55 -589 20 -418 -510 -560 -586	-520 1	-550 -550 -550 -550				-497 50 -606 118 -403 -490 -550 -587	10 S
20 S	-570 1	-509 15 -530 7 -491 -500 -530 -530	-540 1				-494 34 -566 40 -440 -490 -530 -554	20 S
30 S		-530 1	-508 13 -530 13 -490 -510 -521 -530				-487 21 -530 43 -450 -480 -510 -530	30 S
40 S	-473 12 -490 3 -460 -470 -484 -489		-500 10 -510 2 -490 -500 -507 -510				-479 15 -510 39 -458 -480 -490 -510	40 S
			-520 1	-530 1			-481 18 -529 36 -447 -480 -490 -523	
			-510 1	-520 10 -530 2 -510 -520 -527 -530			-478 20 -528 30 -446 -475 -490 -518	
			-500 10 -510 2 -490 -500 -507 -510	-505 13 -520 6 -490 -505 -520 -520			-483 19 -520 26 -455 -480 -500 -520	
				-504 12 -520 5 -490 -510 -514 -519			-479 21 -519 19 -440 -480 -492 -516	
				-507 14 -530 6 -491 -500 -522 -529			-483 21 -529 20 -450 -485 -500 -526	
				-507 12 -520 3 -491 -510 -517 -520			-476 28 -520 15 -426 -470 -508 -517	
							-491 35 -530 8 -440 -505 -520 -529	
							-500 29 -549 27 -435 -500 -520 -545	
							-524 37 -570 20 -444 -540 -560 -570	

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY

FL 390

LAT.

70 N						-570 -40 -610 2	70 N
						-532 -570 -597 -608	
60						-518 44 -599 24	60
						-440 -520 -560 -595	
					-498 37 -550 10	-506 30 -559 20	
					-452 -500 -536 -548	-454 -510 -530 -556	
50							50
					-495 32 -559 24	-480 37 -540 21	
					-445 -490 -530 -551	-398 -480 -510 -540	
					-499 47 -607 17	-557 61 -630 3	
					-433 -510 -534 -591	-483 -560 -608 -627	
40	-620 1				-500 34 -559 6	-511 54 -638 12	40
					-453 -495 -528 -556	-421 -510 -540 -625	
	-600 1				-502 23 -550 12	-495 36 -568 21	
					-474 -490 -520 -550	-444 -480 -538 -558	
30					-500 1	-482 20 -510 6	30
						-461 -470 -510 -510	
	-577 19 -590 3					-478 21 -510 5	
	-552 -590 -590 -590					-451 -480 -497 -508	
						-512 13 -530 9	
						-490 -520 -520 -528	
20					-530 20 -550 2	-510 37 -619 25	20
					-511 -530 -544 -549	-480 -500 -532 -615	
					-570 1		
						-530 25 -570 7	
						-500 -540 -551 -568	
10					-585 5 -590 2	-530 14 -550 7	10
					-580 -585 -588 -590	-504 -530 -540 -549	
					-580 1		
						-543 7 -550 7	
						-531 -540 -550 -550	
0					-537 5 -540 3	-543 8 -550 4	0
					-530 -540 -540 -540	-531 -545 -550 -550	
					-535 5 -540 2	-540 -540 -540 5	
					-530 -535 -538 -540	-540 -540 -540 -540	
10					-530 1	-539 6 -550 8	10
						-530 -540 -540 -549	
						-539 6 -550 7	
						-530 -540 -540 -549	
20						-538 4 -540 6	20
						-531 -540 -540 -540	
						-532 9 -540 6	
						-520 -535 -540 -540	
30					-580 1	-523 19 -550 3	30
						-510 -510 -537 -548	
						-535 17 -550 4	
						-511 -540 -550 -550	
						-562 24 -590 9	
						-522 -570 -587 -590	
40 S					-625 15 -640 2	-558 41 -600 12	40 S
					-611 -625 -635 -639	-485 -570 -590 -598	

30E

60E

90E

120E

150E

180W

150W

LONGITUDE



## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 390

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-539 65 -610 8 -418 -560 -598 -609						-545 62 -610 10 -421 -560 -606 -610	70 N
60	-551 57 -687 11 -472 -540 -582 -672	-565 135 -699 2 -435 -565 -657 -695		-550 1	-647 68 -700 3 -556 -690 -697 -700		-539 67 -700 41 -438 -540 -582 -700	60
50	-519 42 -580 7 -454 -510 -561 -578	-593 50 -660 3 -542 -580 -634 -657		-580 28 -620 3 -560 -560 -801 -618	-597 52 -680 6 -540 -585 -656 -677		-527 53 -677 49 -450 -520 -566 -661	50
40	-480 8 -490 3 -470 -480 -487 -490	-545 25 -570 2 -521 -545 -562 -569	-535 39 -590 4 -483 -535 -566 -587	-596 75 -690 5 -512 -570 -884 -689	-579 43 -669 9 -516 -570 -610 -660	-562 34 -600 6 -512 -570 -592 -599	-516 57 -688 74 -424 -510 -570 -675	40
30	-576 86 -710 7 -482 -530 -691 -708	-504 50 -580 7 -451 -490 -570 -579	-581 59 -698 8 -506 -560 -820 -689	-710 1	-625 37 -680 6 -581 -625 -656 -677	-617 53 -700 6 -553 -600 -676 -697	-555 77 -710 55 -440 -550 -637 -709	30
20	-660 54 -700 6 -553 -680 -692 -699	-543 65 -670 68 -433 -545 -613 -667	-546 71 -699 38 -447 -535 -620 -693	-680 1	-540 1	-593 76 -710 7 -496 -570 -700 -709	-547 72 -706 143 -430 -540 -623 -700	20
10	-581 59 -689 32 -496 -585 -650 -684	-565 61 -668 53 -441 -560 -630 -660	-535 25 -560 2 -511 -535 -552 -559			-490 1	-542 63 -685 152 -430 -540 -618 -670	10
0	-571 50 -640 45 -480 -580 -630 -640	-546 65 -658 14 -460 -540 -618 -660	-590 1				-552 60 -664 72 -460 -550 -620 -640	0
10 S	-535 45 -648 38 -460 -535 -570 -635	-590 8 -600 3 -580 -590 -597 -600					-536 43 -647 53 -460 -530 -587 -630	10 S
20 S	-514 25 -550 8 -480 -510 -546 -550	-585 5 -590 2 -580 -585 -588 -590					-516 37 -619 37 -480 -510 -550 -613	20 S
30 S	-570 10 -580 2 -560 -570 -577 -580						-542 28 -580 10 -500 -545 -570 -578	30 S
40 S	-545 5 -550 4 -540 -545 -550 -550						-543 22 -590 13 -507 -540 -552 -588	40 S
	-540 10 -550 2 -530 -540 -547 -550						-546 14 -579 10 -530 -545 -550 -575	
							-540 8 -550 7 -530 -540 -550 -550	
							-539 3 -540 7 -531 -540 -540 -540	
							-538 6 -550 9 -530 -540 -540 -548	
							-539 6 -550 7 -530 -540 -540 -549	
							-538 4 -540 6 -531 -540 -540 -540	
							-532 9 -540 6 -520 -535 -540 -540	
							-536 24 -579 8 -510 -540 -550 -576	
							-562 24 -590 9 -522 -570 -587 -590	
							-567 45 -639 14 -468 -585 -599 -632	

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 410

70 N

70 N							70 N
60							60
50						-496 39 -540 5 -442 -490 -540 -540	50
40						-484 33 -549 27 -435 -470 -530 -545	40
30						-477 39 -559 32 -412 -470 -520 -554	30
20						-513 30 -598 16 -470 -505 -530 -585	20
10						-482 33 -569 20 -440 -470 -510 -562	10
0						-496 44 -579 12 -422 -490 -535 -573	0
10 S						-513 41 -599 24 -461 -475 -482 -489	10 S
20 S						-596 55 -690 11 -520 -600 -648 -690	20 S
30 S						-601 29 -659 11 -554 -610 -624 -654	30 S
40 S						-610 14 -620 3 -591 -620 -620 -620	40 S
70 S							70 S

LONGITUDE

166

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 410

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

[illegible]

LONGITUDE

167

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APPENDIX C

JANUARY

FL 430

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

**70 N**

60

50

40

30

20

10

0

10

20

30

40 5

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

168

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JANUARY  
FL 430

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

FL 270

70 N

70 N							70 N
60							60
50							50
40	-470 1						40
	-400 1			-427 33 -470 15 -363 -430 -460 -467			
	-370 1			-413 17 -430 3 -391 -420 -427 -430			
30	-322 17 -350 5 -301 -320 -337 -348	-365 15 -380 2 -351 -365 -375 -379		-303 41 -350 3 -252 -310 -337 -348			30
			-260 12 -270 8 -234 -260 -270 -270			-289 44 -360 39 -198 -290 -339 -360	20
20		-190 1				-243 43 -338 11 -200 -220 -278 -330	20
			-223 18 -250 6 -201 -220 -242 -249	-235 5 -240 2 -230 -235 -238 -240			10
10							
			-210 3 -210 -210 -210 -210				0
0			-230 10 -240 2 -220 -230 -237 -240				
			-220 1				10
10				-230 1			
					-215 5 -220 2 -210 -215 -218 -220		20
20	-225 15 -240 2 -211 -225 -235 -239	-260 1					
		-270 2 -270 -270 -270 -270	-280 1		-210 1		30
30			-287 22 -339 7 -271 -280 -282 -333	-275 32 -320 4 -232 -275 -301 -318	-284 17 -300 7 -260 -290 -300 -300		
				-289 30 -340 8 -243 -285 -318 -337	-325 36 -370 12 -270 -335 -362 -370		40 S
40 S							40 S
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

170

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FEBRUARY  
FL 270

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

60

50

40

30

20

10

8

10

20

30

40 S

70 N

60

50

40

4 30

20

10

10

10

20

30

133

171

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY

FL 290

LAT.

70 N						70 N
60						60
50						50
40	-495 5 -500 2 -490 -495 -498 -500					40
30	-480 10 -490 2 -470 -480 -487 -490			-468 38 -529 22 -400 -470 -506 -526		30
20	-433 16 -460 4 -420 -425 -446 -458			-418 29 -450 4 -391 -420 -445 -449		20
10	-374 37 -410 7 -298 -390 -400 -409	-420 1		-323 33 -360 3 -282 -330 -350 -359	-410 1	10
0	-380 1		-296 21 -330 7 -262 -290 -311 -328	-260 1	-334 52 -419 44 -237 -350 -381 -411	0
10		-280 1	-295 15 -310 2 -281 -295 -305 -309	-280 -280 -280 2 -290 -280 -280 -280	-274 36 -330 9 -229 -270 -314 -328	10
20			-285 15 -300 2 -271 -285 -295 -299	-260 1	-246 14 -270 5 -231 -240 -257 -268	20
30			-280 -280 -280 2 -280 -280 -280 -280		-280 1	30
40			-285 5 -290 2 -280 -285 -288 -290			40
50			-270 14 -280 3 -251 -280 -280 -280			50
60			-273 8 -280 4 -261 -275 -280 -280			60
70			-277 5 -280 3 -270 -280 -280 -280	-255 15 -270 2 -241 -255 -265 -269		70
80			-270 -270 -270 2 -270 -270 -270 -270		-280 8 -290 3 -270 -280 -287 -290	80
90	-290 1	-317 9 -330 3 -310 -310 -324 -329				90
100	-240 1	-320 -320 -320 2 -320 -320 -320 -320			-293 12 -310 3 -280 -290 -304 -309	100
110			-330 10 -340 2 -320 -330 -337 -340	-337 9 -350 3 -330 -330 -344 -349	-336 35 -399 22 -280 -330 -373 -396	110
120				-348 34 -418 18 -303 -350 -380 -410	-370 29 -410 3 -341 -360 -394 -408	120
130						130
140						140
150						150
160						160
170						170
180						180
190						190
200						200
210						210
220						220
230						230
240						240
250						250
260						260
270						270
280						280
290						290
300						300
310						310
320						320
330						330
340						340
350						350
360						360
370						370
380						380
390						390
400						400
410						410
420						420
430						430
440						440
450						450
460						460
470						470
480						480
490						490
500						500
510						510
520						520
530						530
540						540
550						550
560						560
570						570
580						580
590						590
600						600
610						610
620						620
630						630
640						640
650						650
660						660
670						670
680						680
690						690
700						700
710						710
720						720
730						730
740						740
750						750
760						760
770						770
780						780
790						790
800						800
810						810
820						820
830						830
840						840
850						850
860						860
870						870
880						880
890						890
900						900
910						910
920						920
930						930
940						940
950						950
960						960
970						970
980						980
990						990
1000						1000

LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 290LAT.  
70 N

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

98%      50%      16%      2%

FL 310

TABULATED TEMPERATURES = °C \* 10

70 N

[illegible]

LONGITUDE

## APPENDIX C

CODE :

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 310

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

70 N								70 N
60		-570 1	-490 10 -500 2 -480 -490 -497 -500	-546 8 -560 5 -540 -540 -554 -559	-550 21 -570 6 -513 -555 -570 -570		-541 26 -570 14 -485 -545 -569 -570	60
	-505 25 -530 2 -481 -505 -522 -529				-538 16 -560 6 -512 -540 -552 -559	-523 31 -550 3 -482 -540 -547 -550	-524 28 -560 12 -480 -535 -550 -558	50
50	-518 32 -570 5 -481 -520 -544 -567				-534 8 -540 5 -521 -540 -540 -540	-540 14 -560 4 -521 -540 -550 -559	-530 23 -570 14 -483 -535 -540 -567	40
	-486 26 -530 5 -460 -490 -504 -527	-540 38 -599 20 -474 -540 -580 -592	-491 57 -570 35 -369 -510 -541 -570			-544 28 -580 7 -510 -560 -570 -579	-511 54 -596 67 -426 -510 -570 -580	30
40	-487 31 -548 27 -411 -490 -510 -534	-486 42 -569 15 -413 -480 -525 -562	-480 20 -500 2 -461 -480 -494 -499			-450 10 -460 2 -440 -450 -457 -460	-485 39 -566 69 -391 -480 -510 -550	20
	-468 40 -529 30 -376 -480 -500 -524	-448 31 -490 12 -392 -450 -482 -490					-466 37 -528 51 -380 -480 -500 -520	10
30	-461 51 -519 9 -363 -480 -490 -515	-400 -400 2 -400 -400 -400 -400					-421 53 -517 35 -320 -430 -480 -500	0
	-425 45 -470 2 -382 -425 -458 -468	-360 1					-370 45 -468 71 -284 -370 -408 -460	10
20							-334 22 -398 21 -310 -330 -350 -384	20
							-325 23 -379 23 -294 -320 -350 -371	10
10							-305 11 -330 17 -290 -300 -314 -327	0
							-321 26 -370 21 -284 -310 -356 -370	10
0							-309 12 -330 16 -280 -310 -320 -327	20
							-311 22 -378 13 -290 -310 -320 -366	10
10							-309 11 -320 9 -292 -310 -320 -320	0
							-330 24 -380 12 -294 -330 -347 -378	10
20				-380 1			-326 21 -379 11 -310 -320 -338 -374	20
						-320 1	-339 21 -380 14 -310 -335 -359 -377	10
30							-381 35 -449 25 -335 -370 -430 -440	0
							-413 28 -479 21 -374 -420 -440 -472	10
40 S								40S
	150W	120W	90W	60W	30W	0	30E	

LONGITUDE

175

APPENDIX C  
STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY

FL 330

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
60							60
50					-460 30 -490 2 -431 -460 -480 -489	-435 5 -440 2 -430 -435 -438 -440	50
40	-490 1			-545 32 -580 4 -502 -550 -575 -579	-550 37 -600 11 -484 -570 -584 -598	-536 5 -540 5 -530 -540 -540 -540	40
30	-493 21 -520 3 -471 -490 -510 -519			-540 39 -589 21 -464 -550 -580 -586	-542 29 -590 13 -495 -540 -571 -588		30
20	-503 48 -560 8 -431 -510 -550 -559			-535 5 -540 2 -530 -535 -538 -540	-527 19 -540 3 -502 -540 -540 -540	-510 20 -530 2 -491 -510 -524 -529	20
10	-447 19 -480 7 -421 -440 -461 -478	-455 38 -520 11 -394 -450 -496 -520		-403 18 -420 4 -381 -405 -420 -420		-458 58 -530 14 -343 -460 -520 -530	10
0	-425 34 -460 4 -374 -435 -450 -459	-427 28 -470 7 -390 -430 -451 -468	-405 20 -440 10 -374 -400 -426 -438	-410 24 -450 4 -390 -400 -431 -448		-427 52 -545 54 -350 -425 -480 -519	0
10 S		-400 6 -410 5 -391 -400 -404 -409	-395 5 -400 4 -390 -395 -400 -400	-375 5 -380 2 -370 -375 -378 -380		-383 15 -400 4 -361 -385 -395 -399	10 S
20 S			-390 10 -400 2 -380 -390 -397 -400	-373 5 -380 3 -370 -370 -377 -380			20 S
30 S				-377 5 -380 3 -370 -380 -380 -380		-370 1	30 S
40 S			-355 5 -360 2 -350 -355 -358 -360	-378 4 -380 4 -371 -380 -380 -380		-350 1	40 S
			-372 4 -380 5 -370 -370 -374 -379	-373 5 -380 3 -370 -370 -377 -380		-390 1	
			-367 5 -370 3 -360 -370 -370 -370	-383 19 -410 3 -370 -370 -397 -408		-368 10 -380 5 -360 -360 -380 -380	
			-390 1	-373 12 -390 3 -360 -370 -384 -389	-358 13 -380 6 -341 -355 -372 -379	-371 15 -400 8 -351 -370 -380 -397	
				-365 5 -370 2 -360 -365 -368 -370	-357 14 -380 12 -340 -355 -372 -380	-420 -420 -420 2 -420 -420 -420 -420	
	-374 13 -390 7 -351 -380 -380 -389	-397 26 -420 3 -362 -410 -417 -420	-340 1	-360 1	-377 19 -410 19 -341 -380 -391 -410	-410 1	
	-360 14 -380 3 -350 -350 -370 -379	-420 1		-390 1	-407 25 -449 21 -364 -410 -430 -446		
			-392 46 -479 6 -342 -375 -432 -474	-460 31 -490 6 -404 -475 -482 -489	-430 36 -489 30 -362 -430 -464 -484		
				-443 41 -490 8 -367 -455 -479 -489	-458 28 -519 31 -416 -460 -480 -514		
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N		-680 -680 -680 -680 2	-640 -20 -660 2	-626 15 -650 5	-570 1		-634 33 -680 10	70 N
		-680 -680 -680 -680	-621 -640 -654 -659	-610 -630 -637 -648			-577 -630 -671 -680	
60		-660 10 -670 2			-535 15 -550 2		-598 64 -670 4	60
		-650 -660 -667 -670			-521 -535 -545 -549		-522 -600 -660 -669	
	-630 1		-470 1		-573 24 -590 3		-564 55 -630 5	
					-542 -590 -590 -590		-476 -590 -604 -627	
50					-550 37 -619 5		-504 60 -618 9	50
					-512 -540 -575 -614		-430 -510 -547 -609	
	-470 1			-513 42 -590 14	-526 33 -590 14	-603 12 -620 3	-534 47 -619 37	
				-448 -505 -550 -587	-483 -515 -568 -587	-590 -600 -614 -619	-462 -530 -590 -613	
40	-542 28 -580 5	-548 44 -609 12	-516 42 -596 41	-480 43 -560 6		-556 41 -610 10	-530 44 -610 95	40
	-495 -550 -560 -560	-460 -550 -582 -606	-450 -520 -560 -576	-451 -465 -544 -558		-477 -560 -597 -610	-450 -540 -570 -610	
	-526 43 -599 44	-537 45 -600 22	-527 37 -579 7			-520 24 -550 3	-532 41 -600 113	
	-442 -530 -570 -591	-440 -545 -576 -600	-465 -540 -551 -576			-491 -520 -540 -549	-442 -540 -570 -598	
30	-504 62 -590 51	-501 50 -569 22				-500 1	-505 55 -590 89	30
	-340 -520 -550 -590	-397 -505 -550 -566					-370 -520 -550 -582	
	-470 45 -539 28						-458 47 -538 64	
	-340 -480 -504 -535						-340 -460 -508 -530	
20	-477 21 -519 6						-427 47 -542 85	20
	-452 -470 -488 -516						-350 -430 -480 -520	
							-391 13 -410 15	
							-363 -390 -400 -407	
10							-380 11 -400 5	10
							-370 -380 -387 -398	
							-375 5 -380 4	
							-370 -375 -380 -380	
0							-367 13 -380 7	0
							-350 -370 -380 -380	
							-374 7 -390 9	
							-370 -370 -380 -388	
10							-372 14 -409 11	10
							-360 -370 -380 -404	
							-368 18 -399 18	
							-343 -370 -383 -397	
20							-366 24 -420 16	20
							-340 -360 -380 -420	
				-420 1			-379 22 -420 33	
							-336 -380 -409 -420	
30							-402 27 -449 25	30
							-350 -405 -430 -445	
							-429 42 -490 42	
							-348 -430 -480 -490	
40 S							-455 31 -519 39	40 S
							-398 -460 -480 -512	

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

178

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 350

LAT.	TABULATED TEMPERATURES = °C * 10																MEAN	LAT			
70 N	-440	1	-670	1	-665	15	-680	2	-606	41	-670	5					-608	73	-680	9	70
	-584	79	-660	5	-451	-665	-675	-679	-570	-580	-651	-668					-461	-640	-670	-678	
60	-584	79	-660	5	-558	64	-630	12									-566	70	-660	17	60
	-457	-620	-654	-659	-452	-590	-615	-630									-450	-590	-630	-657	
	-450	1	-570	63	-678	23	-490	57	-569	3	-540	1	-633	41	-670	4	-559	70	-679	36	60
			-454	-580	-630	-667	-441	-460	-535	-566			-573	-645	-670	-670	-447	-570	-630	-673	
50	-499	53	-628	10	-563	56	-669	12	-558	54	-649	17	-546	50	-600	5	-596	39	-640	14	50
	-429	-485	-531	-614	-502	-540	-632	-663	-459	-540	-624	-644	-481	-580	-587	-598	-530	-605	-630	-640	
	-564	64	-649	24	-575	5	-580	2	-555	53	-630	22	-544	47	-610	10	-557	54	-629	6	
	-444	-570	-623	-641	-570	-575	-578	-580	-448	-555	-613	-630	-464	-545	-591	-608	-481	-580	-590	-625	
40	-565	61	-630	23	-585	43	-630	30	-535	55	-620	61	-550	22	-580	4	-584	31	-640	14	40
	-449	-600	-610	-630	-476	-600	-620	-630	-398	-550	-600	-618	-521	-550	-570	-579	-535	-580	-610	-637	
	-570	49	-638	73	-563	52	-629	45	-556	42	-610	12	-567	12	-580	3	-556	41	-619	7	
	-441	-590	-615	-630	-418	-580	-610	-621	-492	-575	-592	-608	-551	-570	-577	-580	-486	-550	-591	-616	
30	-535	62	-627	111	-498	68	-580	12									-580	1	-530	60	30
	-372	-550	-584	-620	-397	-495	-570	-578									-381	-550	-580	-620	
	-502	55	-607	93													-490	55	-605	151	
	-388	-510	-550	-583													-380	-500	-550	-580	
20	-476	50	-559	22													-460	44	-570	138	20
	-374	-480	-520	-552													-387	-450	-510	-545	
	-460	15	-480	6													-456	25	-535	32	
	-441	-455	-480	-480													-420	-450	-480	-509	
10	-456	15	-480	5													-450	22	-507	28	10
	-440	-460	-467	-478													-407	-450	-465	-493	
	-458	4	-460	4													-443	19	-489	18	
	-451	-460	-460	-460													-420	-435	-460	-483	
0	-457	12	-470	3													-433	21	-479	20	0
	-441	-460	-467	-470													-404	-430	-459	-476	
	-460	1															-419	11	-458	19	
																	-410	-420	-420	-449	
10																	-415	11	-448	26	10
																	-395	-420	-420	-440	
									-460	-460	-460	2					-414	13	-460	34	
									-460	-460	-460	-460					-400	-410	-420	-460	
									-470		1						-416	23	-488	38	
																	-390	-410	-431	-475	
20									-430		1						-420	24	-490	50	20
																	-390	-420	-442	-490	
																	-441	31	-509	47	
																	-390	-440	-480	-501	
30																	-474	32	-529	37	30
																	-414	-480	-520	-523	
																	-488	32	-540	46	
40 S																	-419	-490	-520	-540	40 S
	150W	120W	90W	60W	30W	0	30E														

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FL 370

TABULATED TEMPERATURES = °C \* 10

70 N

[illegible]

LONGITUDE



## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-528 58 -667 11 -446 -530 -554 -648			-590 1	-550 1		-535 56 -667 13 -447 -540 -562 -651	70 N
60	-567 61 -679 18 -483 -550 -636 -677	-573 58 -650 15 -468 -570 -648 -650			-573 5 -580 3 -570 -570 -577 -580		-567 57 -679 38 -475 -565 -641 -673	60
	-508 40 -589 10 -445 -510 -540 -581	-563 60 -660 15 -458 -560 -633 -657		-513 9 -520 3 -501 -520 -520 -520	-636 54 -680 5 -540 -650 -674 -679		-556 70 -680 57 -452 -540 -650 -680	
50	-514 28 -569 8 -481 -510 -530 -564	-528 55 -609 5 -453 -530 -578 -606	-485 35 -520 2 -451 -485 -509 -519	-547 71 -620 10 -437 -575 -616 -620	-573 51 -649 9 -478 -590 -607 -644	-670 1	-555 73 -698 80 -450 -550 -650 -690	50
	-535 54 -648 24 -455 -530 -603 -636	-533 32 -580 6 -484 -530 -564 -578	-523 47 -580 4 -454 -530 -561 -578	-589 58 -640 14 -460 -610 -630 -637	-611 52 -679 11 -516 -620 -654 -676	-574 46 -639 7 -511 -580 -611 -636	-555 57 -674 94 -450 -545 -620 -651	
40	-571 68 -688 24 -455 -575 -640 -661	-580 60 -678 57 -461 -590 -630 -670	-552 61 -666 50 -450 -550 -620 -641	-551 87 -679 8 -441 -570 -620 -672	-520 62 -639 5 -471 -490 -563 -630	-555 36 -620 8 -513 -540 -596 -617	-557 63 -680 199 -450 -560 -630 -670	40
	-604 59 -667 57 -421 -630 -640 -650	-585 52 -670 109 -472 -590 -640 -668	-556 52 -640 14 -490 -560 -609 -637	-564 55 -630 7 -474 -580 -620 -629	-645 5 -650 2 -640 -645 -648 -650	-517 39 -570 3 -481 -500 -548 -567	-567 84 -670 270 -420 -580 -630 -656	
30	-578 53 -670 129 -450 -590 -620 -654	-538 52 -620 14 -435 -545 -579 -617	-553 18 -580 4 -531 -550 -566 -578				-561 57 -670 192 -430 -565 -620 -650	30
	-537 56 -640 110 -410 -540 -600 -628	-550 1	-537 9 -550 3 -530 -530 -544 -549				-527 54 -640 172 -410 -520 -590 -620	
20	-503 62 -610 18 -400 -495 -573 -610	-515 5 -520 2 -510 -515 -518 -520	-525 5 -530 2 -520 -525 -528 -530				-493 47 -610 100 -410 -490 -590 -600	20
	-505 5 -510 2 -500 -505 -508 -510		-510 8 -520 3 -500 -510 -517 -520				-484 22 -538 36 -440 -490 -500 -526	
10	-494 5 -500 5 -490 -490 -500 -500			-505 5 -510 2 -500 -505 -508 -510			-483 19 -520 40 -458 -480 -508 -520	10
	-493 5 -500 3 -490 -490 -497 -500			-500 -500 -500 3 -500 -500 -500 -500			-479 17 -510 36 -457 -480 -500 -510	
0	-500 1			-495 5 -500 2 -490 -495 -498 -500			-478 15 -510 33 -456 -470 -490 -510	0
	-507 5 -510 3 -500 -510 -510 -510			-520 1			-480 21 -520 28 -450 -470 -510 -520	
10	-505 5 -510 2 -500 -505 -508 -510			-520 1			-476 22 -520 25 -445 -470 -502 -520	10
	-530 1						-480 27 -539 23 -449 -470 -515 -536	
20							-472 31 -548 9 -435 -460 -480 -539	20
							-464 19 -500 15 -440 -460 -480 -497	
30							-461 19 -500 15 -433 -460 -480 -497	30
							-491 31 -540 20 -444 -490 -530 -540	
40 S							-531 39 -580 18 -447 -535 -570 -580	40 S

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY

FL 390

LAT.

70 N

70 N						-550	1	70 N
						-526 47 -666 36		
60						-467 -520 -568 -642		60
						-513 34 -579 18	-507 39 -615 35	
						-440 -515 -543 -573	-430 -510 -541 -586	
						-503 34 -560 35	-504 44 -653 25	
50						-430 -500 -540 -560	-445 -500 -542 -612	50
						-506 55 -630 27	-598 89 -700 16	
						-435 -490 -550 -630	-473 -600 -700 -700	
40	-550 73 -649 3					-497 47 -589 12	-536 77 -699 20	
	-482 -520 -608 -645					-424 -495 -542 -581	-420 -550 -600 -696	
	-607 88 -660 3					-536 59 -679 21	-515 51 -684 28	
	-516 -650 -657 -660					-440 -530 -578 -672	-445 -510 -550 -647	
	-575 15 -590 2					-531 19 -560 8	-533 39 -618 7	
30	-561 -575 -585 -589					-501 -535 -549 -559	-485 -530 -534 -609	30
		-580 -580 -580 -580	2			-530 10 -540 2	-467 31 -510 3	
		-580 -580 -580 -580				-520 -530 -537 -540	-440 -450 -491 -508	
						-525 5 -530 2	-529 42 -629 21	
20						-520 -525 -528 -530	-474 -510 -582 -622	20
						-560 7 -570 4	-575 5 -580 2	
						-551 -560 -565 -569	-570 -575 -578 -580	
						-558 4 -560 4	-555 15 -570 2	
10						-551 -560 -560 -560	-541 -555 -565 -569	10
						-558 4 -560 4	-550 22 -580 3	
						-551 -560 -560 -560	-530 -540 -587 -578	
						-550 12 -560 4	-546 12 -570 5	
0						-531 -555 -560 -560	-540 -540 -551 -568	0
						-540 1	-544 13 -570 8	
							-530 -540 -558 -569	
						-530 -530 -530 -530	-550 14 -570 6	
10						-530 1	-540 -540 -570 -570	10
							-545 5 -550 4	
							-540 -545 -550 -550	
							-560 21 -590 5	
20							-540 -550 -584 -589	20
						-560 -560 -560 -560	-573 24 -590 6	
							-540 -590 -590 -590	
						-547 12 -560 3	-570 25 -590 5	
30						-531 -550 -557 -560	-532 -590 -590 -590	30
						-483 22 -529 7	-561 24 -609 10	
						-470 -470 -501 -526	-530 -560 -580 -605	
						-549 32 -600 7	-607 9 -620 3	
40 S						-511 -540 -581 -598	-530 -560 -580 -605	40 S
							-583 39 -630 15	
							-513 -590 -620 -627	
							-590 1	

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 390

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N

60

50

40

30

20

10

0

10

20

30

40S

-499 43 -569 13 -427 -500 -540 -563						-503 43 -569 14 -428 -505 -540 -565
-532 72 -609 16 -436 -515 -594 -684	-460 1					-527 56 -607 53 -450 -520 -577 -670
-494 52 -598 8 -421 -495 -510 -587			-560 16 -580 3 -541 -560 -574 -579	-584 26 -629 7 -551 -580 -601 -626		-517 45 -628 71 -420 -510 -560 -612
-496 67 -685 13 -430 -490 -542 -659	-560 1	-430 1	-473 45 -510 3 -414 -500 -507 -510	-609 82 -710 8 -487 -620 -704 -710	-532 25 -550 6 -484 -545 -550 -550	-512 58 -710 92 -430 -500 -550 -694
-557 69 -679 21 -446 -540 -628 -676	-535 45 -580 2 -492 -535 -566 -578	-570 87 -670 4 -463 -575 -656 -668	-609 62 -718 7 -503 -610 -624 -708	-689 36 -730 10 -617 -685 -728 -730	-571 44 -650 10 -512 -565 -618 -648	-568 84 -730 97 -439 -550 -670 -721
-586 63 -680 12 -482 -580 -655 -678	-575 53 -689 38 -507 -560 -641 -683	-537 54 -649 33 -456 -530 -589 -644	-650 1	-595 5 -600 2 -590 -595 -598 -600	-581 54 -670 9 -512 -590 -639 -667	-556 64 -696 138 -435 -550 -631 -683
-575 83 -690 14 -470 -575 -650 -690	-594 59 -688 60 -502 -590 -660 -680	-561 63 -679 10 -485 -540 -638 -676				-556 73 -690 154 -421 -540 -650 -689
-569 67 -670 51 -460 -560 -650 -670	-558 45 -659 9 -512 -550 -592 -650	-540 1				-560 59 -670 81 -460 -540 -640 -664
-550 60 -659 49 -440 -530 -623 -650	-580 1					-545 59 -658 63 -440 -530 -611 -650
-532 53 -638 14 -463 -520 -589 -627	-570 1	-580 1				-534 44 -639 42 -468 -525 -584 -632
		-565 5 -570 2 -560 -565 -568 -570	-560 1			-560 15 -580 10 -525 -560 -570 -578
		-580 1	-555 5 -560 2 -550 -555 -558 -560			-558 12 -570 13 -532 -560 -570 -570
			-550 5 -560 3 -550 -550 -550 -550			-553 13 -579 10 -532 -550 -560 -576
			-550 7 -560 4 -541 -550 -555 -559			-548 11 -570 13 -532 -550 -560 -568
-560 1			-550 7 -560 4 -541 -550 -555 -559			-548 12 -570 14 -530 -540 -560 -567
-570 -570 -570 2 -570 -570 -570 -570			-565 5 -570 2 -560 -565 -568 -570			-553 16 -570 12 -530 -550 -570 -570
-570 -570 -570 3 -570 -570 -570 -570			-670 1			-554 15 -570 9 -532 -550 -570 -570
-575 5 -580 2 -570 -575 -578 -580			-525 5 -530 2 -520 -525 -528 -530			-556 24 -590 9 -522 -550 -580 -588
						-570 21 -590 8 -540 -575 -590 -590
						-551 37 -590 9 -480 -550 -590 -590
						-540 46 -619 26 -470 -540 -590 -615
						-573 39 -629 23 -510 -580 -620 -628

150W

120W

90W

60W

30W

0

30E

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY

FL 410

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
						-540 1	
60					-468 40 -530 5 -413 -460 -504 -527	-450 1	60
					-506 35 -578 33 -439 -510 -539 -567	-517 26 -540 3 -482 -530 -537 -540	
50					-506 28 -578 36 -444 -510 -530 -566	-536 28 -570 7 -492 -530 -570 -570	50
				-527 25 -560 15 -490 -530 -558 -560	-533 68 -699 20 -458 -510 -549 -696	-566 42 -640 9 -520 -550 -614 -637	
40	-535 25 -560 2 -511 -535 -552 -559			-544 55 -698 21 -468 -540 -576 -688	-550 96 -708 4 -471 -510 -628 -700	-517 34 -589 21 -460 -520 -550 -582	40
	-568 29 -620 15 -518 -570 -598 -617			-530 27 -560 4 -492 -535 -555 -559			
30	-579 17 -600 7 -551 -590 -590 -599						30
20			-605 11 -620 8 -590 -605 -619 -620			-580 50 -649 3 -540 -550 -618 -646	20
			-610 8 -620 7 -600 -610 -620 -620			-655 5 -660 2 -650 -655 -658 -660	
10			-608 7 -620 6 -600 -610 -612 -619			-617 33 -640 3 -573 -640 -640 -640	10
	-560 1		-608 13 -630 8 -590 -610 -619 -629			-630 1	
0			-603 19 -630 4 -581 -600 -620 -629				0
10							10
20						-600 1	20
						-605 5 -610 2 -600 -605 -608 -610	
30					-590 1	-615 15 -630 2 -601 -615 -625 -629	30
					-578 35 -630 5 -532 -590 -604 -627	-617 19 -630 3 -592 -630 -630 -630	
40 S					-580 48 -650 10 -532 -555 -646 -650	-580 1	40 S
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FEBRUARY  
FL 410

LAT

70 N

60

50

40

30

20

10

0

10

20

30

405

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

# STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY

FL 430

LAT.

70 N

[illegible]

186

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

FEBRUARY  
FL 430

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

70 N								70 N
60				-550 -550 -550 2 -550 -550 -550 -550	-535 15 -550 2 -521 -535 -545 -549		-543 13 -550 4 -522 -550 -550 -550	60
	-540 1	-495 25 -520 2 -471 -495 -512 -519	-510 40 -550 2 -472 -510 -537 -548			-510 1	-510 31 -550 6 -470 -515 -542 -549	
50	-547 21 -570 3 -521 -550 -564 -569	-504 20 -520 5 -480 -520 -520 -520					-511 29 -570 15 -480 -500 -543 -567	50
	-550 1	-583 12 -600 3 -570 -580 -594 -599	-532 37 -590 5 -483 -520 -564 -587				-519 39 -599 26 -475 -510 -570 -595	
40	-575 17 -600 8 -550 -575 -590 -599	-533 26 -570 3 -510 -520 -554 -568					-547 37 -599 19 -474 -550 -581 -596	40
	-599 51 -669 7 -540 -590 -642 -684						-600 44 -688 11 -540 -590 -640 -680	
30	-580 64 -669 3 -530 -540 -628 -665						-611 44 -669 9 -532 -630 -637 -665	30
							-645 17 -670 6 -621 -645 -662 -669	
20							-660 -660 -660 3 -660 -660 -660 -660	20
							-653 12 -670 3 -640 -650 -664 -669	
10							-658 18 -680 4 -640 -655 -675 -679	10
							-680 30 -690 2 -631 -660 -680 -689	
0								0
10								10
20								20
30							-565 5 -570 2 -560 -565 -568 -570	30
							-560 -560 -560 3 -580 -560 -560 -560	
40 S								40 S
	150W	120W	90W	60W	30W	0	30E	

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 270

LAT.

70 N						70 N
60						60
50						50
40	-430 51 -480 3 -364 -450 -470 -479					40
	-387 19 -400 3 -362 -400 -400 -400			-409 38 -459 21 -318 -420 -440 -456		
30	-422 67 -510 6 -351 -410 -494 -508			-355 47 -429 4 -311 -340 -396 -426		30
	-340 1	-328 26 -370 4 -301 -320 -346 -367				
20			-264 25 -309 8 -223 -265 -279 -306		-307 36 -369 29 -238 -310 -345 -364	20
			-248 20 -280 6 -230 -240 -272 -279		-330 22 -350 3 -302 -340 -347 -350	
10			-252 21 -280 5 -222 -250 -274 -279	-224 10 -240 5 -211 -220 -234 -239		10
0			-210 1			0
			-230 1			
10						10
				-220 20 -240 2 -201 -220 -234 -239		
20					-216 16 -240 5 -200 -210 -234 -239	20
	-210 1					
30						30
			-263 21 -290 3 -241 -260 -280 -289	-293 23 -330 4 -271 -285 -311 -328	-324 17 -350 5 -310 -310 -344 -349	
40 S				-295 5 -300 2 -290 -295 -298 -300	-380 1	40 S
	30E	60E	90E	120E	150E	180W
	LONGITUDE					150W



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 270

TABULATED TEMPERATURES = °C \* 10

[illegible]

70 N

60

50

40

30

20

10

0

10

20

30

403

[illegible]

150W                      120W                      90W                      60W                      30W                      0                      30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
60							60
50							50
40	-460 40 -500 2 -422 -460 -487 -498						40
	-465 32 -519 12 -410 -470 -492 -516			-453 37 -519 22 -377 -465 -486 -516	-520 30 -550 2 -491 -520 -540 -549		
30	-440 45 -539 16 -380 -435 -476 -531			-430 30 -479 7 -382 -440 -442 -475			30
	-390 22 -420 3 -370 -380 -407 -418	-358 27 -400 12 -322 -350 -385 -400		-365 21 -390 4 -341 -365 -385 -389		-397 9 -410 3 -390 -390 -404 -409	
20			-304 24 -330 5 -263 -310 -324 -329	-310 10 -320 2 -300 -310 -317 -320		-354 36 -419 40 -288 -360 -390 -412	20
		-323 18 -340 4 -301 -325 -340 -340	-303 15 -320 7 -281 -310 -320 -320	-307 5 -310 3 -300 -310 -310 -310		-290 10 -300 2 -280 -290 -297 -300	
10			-287 15 -310 7 -262 -290 -300 -309	-282 18 -300 6 -252 -285 -300 -300			10
			-280 2 -280 -280 -280 -280				
0							0
10							10
				-270 1			
					-260 1		
20	-280 1	-270 1					20
	-350 1				-300 1		
30			-320 -320 -320 2 -320 -320 -320 -320	-337 31 -380 3 -310 -320 -361 -378	-335 35 -390 4 -301 -325 -366 -387		30
40 S				-370 23 -400 5 -341 -370 -394 -399	-400 1		40 S
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 310

LAT.

70 N						70 N	
60						60	
50						50	
40	-503 29 -540 3 -471 -500 -527 -538				-498 29 -530 4 -453 -505 -520 -529	40	
	-501 23 -549 11 -470 -500 -520 -544			-482 32 -549 23 -440 -480 -515 -546	-515 60 -560 4 -451 -515 -575 -579		
30	-485 30 -520 8 -433 -490 -510 -519			-432 55 -529 5 -365 -420 -466 -522		30	
	-470 1	-408 27 -459 13 -360 -410 -430 -453		-350 350 2 -350 -350 -350 -350	-440 1		
20		-400 7 -410 4 -391 -400 -405 -409	-367 17 -390 6 -350 -360 -390 -390	-345 5 -350 2 -340 -345 -348 -350	-397 32 -450 42 -326 -400 -430 -450	20	
			-355 21 -390 13 -330 -360 -380 -388		-333 25 -380 6 -310 -325 -356 -377		
10			-340 10 -350 2 -330 -340 -347 -350	-319 17 -350 7 -292 -320 -331 -348	-310 1	10	
0			-310 1			0	
			-320 10 -330 2 -310 -320 -327 -330				
10			-320 1	-315 5 -320 2 -310 -315 -318 -320		10	
				-320 320 2 -320 -320 -320 -320	-340 14 -350 3 -321 -350 -350 -350		
20					-300 12 -320 4 -290 -295 -310 -319	-370 1	20
	-363 18 -380 4 -341 -365 -380 -380	-360 1		-325 5 -330 2 -320 -325 -328 -330	-290 1		
30	-400 2 -400 -400 -400 -400			-360 2 -360 -360 -360 -360		30	
			-390 1	-378 29 -420 5 -333 -380 -401 -418	-408 38 -450 4 -370 -405 -445 -449		
40 S				-470 10 -480 2 -460 -470 -477 -480	-450 2 -450 -450 -450 -450	40 S	
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 310

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N					-590 20 -610 2 -571 -590 -604 -609		-590 20 -610 2 -571 -590 -604 -609	70 N
60				-440 1	-583 5 -590 3 -580 -580 -587 -590		-548 62 -590 4 -448 -580 -585 -589	60
	-510 1				-530 30 -579 6 -484 -530 -548 -576		-527 29 -579 7 -484 -520 -542 -575	
50	-480 14 -490 3 -461 -490 -490 -490	-518 20 -550 4 -500 -510 -536 -548		-500 27 -530 8 -446 -505 -520 -529	-517 35 -589 35 -447 -510 -546 -583	-513 33 -569 9 -455 -520 -530 -564	-512 33 -588 59 -442 -510 -540 -578	50
	-517 29 -540 6 -464 -530 -540 -540	-510 1	-510 16 -530 6 -482 -515 -522 -529	-505 25 -530 2 -481 -505 -522 -529	-490 1	-513 28 -560 13 -465 -510 -541 -558	-512 26 -559 29 -460 -510 -540 -554	
40	-502 16 -520 6 -473 -505 -512 -519	-509 26 -558 31 -456 -510 -540 -548	-488 39 -558 64 -430 -490 -530 -550	-540 1	-520 1	-507 40 -579 12 -437 -515 -542 -573	-497 36 -573 122 -430 -500 -536 -556	40
	-487 40 -577 32 -412 -490 -520 -561	-490 30 -540 17 -450 -490 -524 -540	-448 29 -509 9 -420 -440 -472 -505			-470 55 -559 5 -395 -470 -509 -554	-484 39 -580 101 -420 -480 -520 -570	
30	-463 41 -530 17 -383 -460 -504 -530	-456 28 -519 31 -402 -450 -480 -514					-460 37 -530 61 -382 -450 -500 -530	30
	-438 31 -490 6 -410 -430 -486 -487		-430 1				-415 36 -489 24 -350 -415 -453 -481	
20	-420 36 -450 3 -373 -440 -447 -450						-394 33 -450 57 -331 -390 -430 -450	20
	-367 19 -380 3 -342 -380 -380 -380						-350 25 -389 22 -310 -345 -380 -386	
10			-360 14 -380 4 -341 -360 -370 -379				-333 24 -379 14 -295 -330 -359 -375	10
			-340 16 -360 4 -321 -340 -355 -359				-340 16 -360 4 -321 -340 -355 -359	
0							-310 1	0
							-320 10 -330 2 -310 -320 -327 -330	
10							-317 5 -320 3 -310 -320 -320 -320	10
							-332 15 -350 5 -320 -320 -350 -350	
20				-360 1			-322 32 -370 6 -290 -310 -362 -369	20
							-344 29 -380 8 -294 -345 -378 -380	
30						-380 1	-380 18 -400 5 -360 -380 -400 -400	30
							-391 34 -450 10 -337 -385 -431 -448	
40 S							-460 12 -480 4 -450 -455 -470 -479	40 S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 330

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
60							60
50						-450 1	50
40						-450 1	40
30						-540 28 -580 6 -502 -535 -572 -579	30
20						-570 43 -620 5 -520 -580 -614 -619	20
10							10
0							0
10 S							10 S
20 S							20 S
30 S							30 S
40 S							40 S

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 330

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

LAT.	70 N	60	50	40	30	20	10	0	10	20	30	40 S
LONGITUDE	150W	120W	90W	60W	30W	0	30E	60E	90E	120E	150E	180
70 N						-570 1				-570 1		
60		-580 36 -610 3 -533 -600 -607 -610	-515 55 -609 11 -436 -510 -580 -604	-548 43 -619 6 -485 -540 -588 -616	-530 20 -550 2 -511 -530 -544 -549					-535 52 -619 22 -443 -535 -593 -616		
50		-542 45 -610 9 -463 -550 -582 -607	-505 35 -540 2 -471 -505 -529 -539	-519 40 -579 13 -435 -530 -550 -573	-539 31 -589 21 -490 -550 -570 -586					-530 40 -607 46 -448 -540 -568 -592		
40	-490 44 -559 5 -432 -490 -528 -556	-574 47 -600 5 -489 -600 -600 -600	-520 520 -520 2 -520 -520 -520 -520	-543 30 -608 27 -485 -540 -570 -600	-546 41 -610 56 -472 -545 -600 -609	-550 24 -580 12 -520 -550 -580 -580	-543 41 -610 108 -460 -540 -590 -609					
30	-535 41 -570 8 -444 -550 -559 -569	-558 25 -580 4 -522 -565 -580 -580	-517 33 -579 19 -441 -510 -541 -573	-524 37 -589 49 -459 -530 -583 -580	-538 29 -589 18 -487 -535 -566 -587	-558 29 -590 4 -521 -560 -585 -589	-531 37 -617 113 -437 -530 -570 -590					
20	-560 44 -600 7 -477 -580 -600 -600	-521 39 -586 43 -418 -530 -550 -565	-518 39 -598 78 -430 -515 -560 -585	-521 38 -560 11 -456 -540 -580 -580	-538 29 -579 8 -478 -545 -550 -576	-547 38 -599 10 -474 -550 -580 -596	-526 40 -600 174 -430 -530 -560 -595					
10	-525 34 -598 39 -446 -530 -550 -585	-522 31 -579 21 -468 -520 -550 -576	-498 33 -530 8 -443 -505 -530 -530			-477 39 -530 3 -441 -460 -508 -527	-522 40 -613 112 -440 -530 -560 -590					
0	-505 34 -559 36 -427 -520 -534 -553	-489 38 -568 26 -425 -495 -520 -555	-494 21 -520 5 -462 -490 -514 -519			-450 20 -470 2 -431 -450 -464 -469	-498 36 -567 93 -420 -500 -530 -560					
10	-499 21 -540 34 -453 -500 -517 -540	-438 12 -460 6 -430 -430 -452 -459	-466 22 -500 9 -430 -470 -480 -497				-481 33 -540 80 -410 -490 -510 -540					
20	-497 19 -510 3 -472 -510 -510 -510	-438 7 -450 6 -430 -440 -442 -449	-460 1				-439 41 -530 76 -365 -440 -480 -520					
30		-415 14 -439 11 -390 -420 -420 -436					-404 26 -469 48 -368 -400 -425 -461					
40		-393 5 -400 3 -390 -390 -397 -400	-410 20 -430 6 -373 -420 -422 -429				-396 18 -429 29 -368 -400 -410 -424					
50			-380 1				-387 12 -410 9 -380 -380 -402 -410					
60			-380 -380 -380 2 -380 -380 -380 -380				-379 3 -380 8 -371 -380 -380 -380					
70			-390 -390 -390 2 -390 -390 -390 -390				-373 14 -390 14 -338 -375 -380 -390					
80							-370 6 -380 11 -360 -370 -374 -380					
90							-369 13 -399 13 -345 -370 -380 -395					
100							-370 13 -390 10 -350 -370 -380 -388					
110				-420 1			-378 26 -439 16 -340 -370 -396 -434					
120							-384 27 -439 12 -337 -390 -402 -433					
130							-432 44 -490 15 -353 -430 -480 -490					
140							-468 34 -519 11 -412 -480 -494 -516					

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 350

LAT.

[illegible]

LONGITUDE



## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 350

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

-528 29 -550 4 -483 -540 -550 -550	-515 15 -530 2 -501 -515 -525 -529					-523 26 -550 6 -482 -530 -550 -550
-533 16 -560 4 -520 -525 -546 -558	-550 34 -619 12 -500 -550 -575 -613	-567 19 -580 3 -542 -580 -580 -580	-527 47 -560 3 -464 -560 -560 -560	-565 5 -570 2 -560 -565 -568 -570		-551 37 -639 25 -479 -560 -580 -630
-490 30 -520 2 -461 -490 -510 -519	-548 49 -630 13 -482 -540 -612 -630	-505 9 -510 4 -491 -510 -510 -510	-574 33 -610 10 -512 -585 -600 -608	-575 51 -640 16 -480 -590 -630 -637		-553 52 -648 56 -460 -560 -610 -639
-483 25 -510 3 -452 -490 -504 -509	-562 64 -640 6 -464 -575 -624 -638	-577 46 -650 14 -498 -575 -620 -647	-555 59 -630 31 -432 -570 -610 -630	-566 46 -638 53 -470 -570 -617 -630	-585 46 -630 8 -496 -605 -619 -629	-560 55 -646 137 -447 -570 -612 -640
-573 48 -620 12 -463 -590 -605 -620	-560 21 -580 4 -531 -565 -580 -580	-561 49 -649 32 -461 -570 -610 -644	-542 51 -630 27 -430 -550 -580 -630	-570 36 -620 3 -540 -550 -598 -617	-551 52 -610 7 -471 -580 -600 -609	-553 53 -657 106 -441 -560 -602 -639
-583 29 -619 24 -515 -590 -610 -615	-560 48 -628 63 -422 -570 -600 -620	-543 58 -646 70 -430 -550 -610 -630		-546 55 -590 5 -456 -580 -590 -590	-588 35 -630 8 -530 -600 -610 -627	-554 54 -644 199 -430 -570 -610 -630
-562 40 -627 99 -430 -570 -590 -620	-551 41 -590 53 -460 -560 -580 -590	-546 46 -619 14 -446 -540 -589 -615			-490 1	-549 47 -624 201 -420 -560 -590 -610
-550 44 -616 136 -437 -560 -580 -603	-528 39 -580 17 -466 -540 -570 -580	-530 30 -560 2 -501 -530 -550 -559				-545 43 -614 198 -430 -550 -580 -610
-523 45 -587 110 -395 -530 -570 -580	-520 22 -550 6 -483 -525 -534 -548	-502 25 -530 5 -471 -500 -530 -530				-518 43 -584 193 -417 -530 -560 -580
-509 45 -559 20 -411 -525 -550 -556	-489 19 -529 8 -463 -485 -499 -526	-503 24 -520 3 -472 -520 -520 -520				-495 39 -566 131 -412 -500 -532 -560
-530 1	-470 10 -490 10 -460 -470 -480 -488					-458 29 -529 40 -410 -460 -480 -522
	-460 1	-455 11 -470 13 -432 -460 -461 -470				-440 17 -470 56 -410 -440 -460 -469
		-444 19 -480 5 -430 -440 -454 -477				-434 17 -479 21 -410 -430 -450 -472
		-430 1	-420 1			-424 8 -430 13 -405 -430 -430 -430
		-450 1	-425 5 -430 2 -420 -425 -428 -430			-426 9 -449 16 -413 -425 -430 -444
			-433 4 -440 4 -430 -430 -435 -439			-422 9 -440 16 -403 -420 -430 -437
			-438 8 -450 4 -430 -435 -445 -449			-423 13 -450 16 -403 -420 -436 -447
			-448 15 -470 4 -431 -445 -460 -469			-424 20 -469 13 -392 -420 -441 -465
			-500 1			-420 27 -497 16 -380 -420 -436 -482
						-421 24 -470 14 -390 -410 -440 -467
						-443 46 -510 9 -400 -410 -507 -510
						-487 37 -549 11 -414 -490 -518 -546

150W

120W

90W

60W

30W

0

30E

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 370

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						-540	1	70 N
						-534	72 -668 5	
						-463 -510 -580 -659		
60						-470	1	60
						-510 55 -639 23		
						-434 -490 -564 -631		
50						-526 71 -670 16		50
						-443 -510 -598 -670		
						-513 71 -648 21		
						-406 -500 -580 -638		
40						-568 65 -670 13		40
						-502 -530 -670 -670		
						-611 46 -650 9		
						-506 -630 -644 -650		
	-550 30 -580 2					-555 45 -600 2		
	-521 -550 -570 -579					-512 -555 -586 -598		
						-548 72 -669 18		
						-443 -540 -636 -663		
						-568 66 -640 21		
						-454 -600 -638 -640		
	-527 30 -589 7					-559 65 -659 27		
	-501 -510 -552 -585					-431 -560 -638 -655		
						-542 64 -667 33		
						-438 -530 -628 -651		
						-560 57 -640 14		
						-473 -570 -627 -640		
	-579 28 -610 8					-542 85 -630 6		
	-533 -585 -609 -610					-421 -575 -622 -629		
						-496 75 -648 15		
						-386 -530 -540 -636		
						-590 22 -620 3		
						-570 -580 -607 -618		
30						-535 5 -540 2		30
						-530 -535 -538 -540		
	-540							
		-536 37 -590 13						
		-482 -550 -571 -588						
			-505 13 -530 10					
			-484 -500 -516 -528					
						-490	1	
						-470	1	
						-515 42 -598 67		
						-443 -510 -564 -590		
20						-475 5 -480 2		20
						-463 -500 -510 -510		
						-504 14 -520 14		
						-480 -505 -520 -520		
						-483 13 -500 4		
						-470 -480 -495 -499		
						-487 5 -490 3		
						-480 -490 -490 -490		
						-467 17 -490 3		
						-450 -460 -480 -489		
						-501 16 -520 7		
						-488 6 -500 11		
						-480 -490 -490 -498		
						-480 -480 -480 -480		
						-458 4 -460 4		
						-451 -460 -460 -460		
10						-476 17 -510 5		10
						-461 -470 -484 -507		
						-494 30 -540 5		
						-470 -470 -527 -538		
0						-470		0
						-470 -470 -470 -470		
						-450 20 -470 2		
						-431 -450 -464 -469		
10						-478 4 -480 4		10
						-471 -480 -480 -480		
						-478 13 -490 6		
						-453 -480 -490 -490		
20						-478 19 -500 6		20
						-451 -480 -500 -500		
						-560 10 -570 2		
						-550 -560 -567 -570		
						-590	1	
						-480 15 -500 6		
						-460 -485 -492 -499		
30						-540 44 -590 5		30
						-466 -540 -577 -588		
						-483 15 -510 7		
						-461 -480 -491 -508		
						-530	1	
						-489 36 -530 7		
						-432 -510 -520 -529		
40 S								40 S

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 370

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-518 23 -560 12 -482 -513 -537 -560	-530 1					-520 24 -560 14 -483 -523 -539 -560	70 N
60	-512 43 -590 12 -454 -500 -557 -588	-514 23 -550 14 -475 -510 -539 -550	-570 1	-565 70 -840 6 -462 -590 -832 -639	-515 57 -609 4 -470 -490 -562 -604		-524 52 -666 42 -458 -510 -580 -645	60
50	-547 51 -640 9 -500 -520 -606 -637	-542 59 -649 11 -442 -530 -600 -646	-650 1	-617 34 -669 10 -570 -615 -850 -666	-571 56 -650 13 -482 -590 -641 -650		-549 65 -666 68 -433 -540 -633 -650	50
40	-518 58 -629 9 -442 -510 -573 -624	-508 29 -530 5 -456 -520 -524 -529	-543 74 -639 3 -463 -530 -605 -636	-586 63 -679 36 -441 -600 -840 -673	-592 49 -696 43 -507 -600 -633 -675	-595 59 -670 6 -513 -600 -654 -668	-562 70 -692 139 -438 -570 -630 -670	40
30	-588 57 -659 25 -459 -610 -840 -655	-595 65 -660 11 -474 -600 -654 -660	-577 82 -660 12 -471 -575 -652 -660	-599 50 -860 17 -480 -610 -840 -657	-633 5 -640 3 -630 -630 -637 -640	-578 57 -659 8 -494 -585 -629 -656	-589 59 -670 98 -469 -610 -650 -670	30
20	-609 51 -670 29 -476 -630 -840 -670	-560 66 -670 77 -440 -580 -628 -665	-563 70 -678 56 -430 -575 -632 -669		-540 57 -619 3 -491 -510 -585 -616	-579 53 -669 9 -502 -580 -629 -665	-567 67 -674 217 -440 -580 -640 -670	20
10	-597 48 -650 59 -483 -610 -640 -650	-570 59 -666 118 -430 -580 -630 -657	-539 57 -630 23 -430 -570 -580 -630				-567 60 -670 281 -430 -580 -630 -650	10
0	-573 52 -640 110 -450 -580 -820 -638	-548 54 -639 33 -439 -560 -599 -634	-566 17 -580 8 -533 -570 -580 -580				-561 58 -645 183 -420 -580 -620 -640	0
10 S	-563 48 -630 95 -459 -570 -810 -621	-560 37 -600 4 -504 -570 -590 -599	-545 15 -570 8 -521 -545 -559 -569				-558 46 -630 149 -460 -570 -600 -620	10 S
20 S	-540 40 -609 22 -463 -545 -570 -602	-523 37 -570 4 -472 -525 -556 -568	-550 1				-517 40 -607 114 -450 -510 -570 -590	20 S
30 S	-520 1	-535 15 -550 2 -521 -535 -545 -549	-515 15 -530 2 -501 -515 -525 -529				-497 22 -548 31 -456 -500 -520 -538	30 S
40 S	-515 5 -520 2 -510 -515 -518 -520		-503 12 -520 6 -482 -605 -512 -519	-500 1			-491 18 -520 34 -457 -490 -510 -520	40 S
	-510 1		-495 15 -510 2 -481 -495 -505 -509	-505 5 -510 2 -500 -505 -508 -510			-488 19 -510 11 -462 -480 -510 -510	
				-500 8 -510 3 -490 -500 -507 -510			-493 24 -540 9 -470 -490 -517 -537	
			-480 1	-500 11 -520 5 -490 -500 -507 -518			-490 16 -520 8 -470 -490 -500 -517	
			-490 1	-500 21 -520 9 -456 -510 -517 -520			-489 26 -520 13 -435 -490 -511 -520	
				-500 12 -510 6 -481 -505 -510 -510			-491 14 -510 10 -472 -485 -510 -510	
				-505 14 -520 8 -481 -505 -520 -520			-494 19 -520 14 -458 -490 -519 -520	
				-508 13 -520 4 -491 -510 -520 -520			-490 22 -520 10 -452 -495 -511 -520	
							-510 45 -590 9 -460 -490 -564 -587	
							-508 41 -589 13 -460 -490 -542 -585	
							-489 36 -530 7 -432 -510 -520 -529	

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

FL 390

70 N

70 N						-480	1	70 N
						-509 62 -669 24 -425 -495 -559 -661		
60						-508 59 -637 16 -415 -500 -562 -622	-500 48 -598 28 -435 -495 -557 -589	60
						-520 46 -662 47 -438 -520 -560 -615	-501 40 -588 20 -434 -500 -530 -575	
50						-552 65 -689 49 -470 -540 -623 -680	-564 90 -690 11 -456 -520 -680 -688	50
						-557 69 -698 34 -467 -550 -630 -687	-601 70 -689 19 -514 -570 -680 -686	
40	-595 45 -640 2 -552 -595 -626 -638			-562 67 -679 25 -459 -530 -640 -670		-531 76 -698 11 -460 -490 -594 -686	-516 25 -550 7 -481 -510 -550 -550	40
	-567 52 -639 3 -530 -530 -605 -636			-552 70 -680 28 -460 -540 -630 -680		-517 48 -599 7 -445 -530 -552 -594	-508 8 -520 4 -500 -505 -515 -519	
30	-550 1			-545 5 -550 2 -540 -545 -548 -550		-598 40 -669 6 -543 -600 -622 -664		30
	-530 1	-550 1		-550 14 -570 3 -540 -540 -560 -569		-546 38 -609 15 -486 -560 -580 -604		
20			-558 15 -580 5 -541 -550 -574 -579	-550 10 -560 2 -540 -550 -557 -560		-525 15 -540 2 -511 -525 -535 -539		20
			-543 5 -550 3 -540 -540 -547 -550			-550 5 -540 2 -530 -535 -538 -540	-550 550 -550 -550	
10			-540 1	-543 8 -550 4 -531 -545 -550 -550		-550 10 -570 2 -550 -560 -567 -570		10
				-540 5 -540 2 -530 -535 -538 -540		-560 13 -580 4 -550 -560 -575 -579		
0				-540 5 -540 2 -530 -535 -538 -540		-558 8 -570 4 -550 -555 -565 -569		0
				-540 5 -540 2 -530 -535 -538 -540		-558 13 -580 5 -541 -560 -567 -578		
10				-520 1		-550 550 -550 -550		10
						-550 550 -550 -550		
20						-550 550 -550 -550		20
						-550 550 -550 -550		
30			-580 1		-550 1	-550 1		30
				-490 1	-545 5 -550 2 -540 -545 -548 -550			
40 S				-510 1	-565 17 -580 4 -541 -570 -580 -580			40 S
30E	60E	90E	120E	150E	180W	150W		

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 390

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

60

50

40

30

20

10

0

10

20

30

40 S

-502 15 -520 10 -474 -510 -516 -520							-500 16 -520 11 -472 -510 -514 -520
-505 31 -560 13 -457 -500 -541 -558	-523 26 -579 6 -510 -510 -532 -574						-510 31 -667 43 -428 -500 -543 -653
-507 35 -570 13 -462 -500 -542 -568	-539 42 -667 18 -484 -530 -563 -650	-570 1	-595 5 -600 2 -590 -595 -598 -600	-550 1			-516 51 -663 79 -436 -520 -570 -623
-547 71 -679 11 -456 -520 -634 -672	-540 39 -639 13 -492 -530 -563 -630	-550 79 -670 8 -443 -545 -643 -667	-533 85 -650 7 -424 -520 -631 -648	-603 24 -620 3 -572 -620 -620 -620	-600 30 -630 2 -571 -600 -620 -629		-529 57 -677 111 -432 -520 -584 -666
-564 70 -660 17 -446 -560 -644 -657	-528 75 -659 5 -451 -530 -583 -650	-535 79 -698 32 -426 -520 -640 -688	-598 85 -690 9 -470 -640 -687 -687		-623 26 -660 3 -600 -610 -644 -658		-554 76 -696 126 -435 -540 -650 -690
-634 58 -689 27 -500 -660 -680 -685	-561 70 -678 54 -440 -565 -640 -670	-571 74 -678 56 -441 -585 -650 -670	-660 1		-592 65 -640 6 -492 -635 -640 -640		-577 73 -693 224 -440 -580 -660 -680
-620 62 -690 34 -497 -640 -677 -690	-569 71 -687 92 -436 -570 -650 -672	-564 65 -669 19 -454 -590 -621 -663					-571 72 -694 194 -449 -570 -650 -681
-584 61 -679 40 -460 -580 -640 -672	-567 56 -659 20 -475 -565 -649 -656	-591 19 -620 12 -549 -590 -610 -618					-571 57 -677 86 -460 -570 -634 -670
-581 50 -649 35 -484 -590 -636 -643	-588 32 -639 10 -529 -585 -620 -636	-593 9 -610 6 -581 -590 -602 -609					-582 44 -666 62 -500 -590 -622 -648
-539 48 -639 7 -491 -520 -583 -630	-587 7 -600 6 -580 -585 -592 -599						-553 37 -637 35 -487 -560 -586 -620
	-585 5 -590 2 -580 -585 -588 -590	-560 1					-551 24 -590 8 -514 -545 -578 -589
		-565 5 -570 2 -560 -565 -568 -570					-546 11 -570 11 -530 -550 -554 -568
		-558 13 -570 4 -541 -560 -570 -570	-550 1				-551 12 -570 8 -540 -550 -568 -570
		-550 14 -570 3 -540 -540 -560 -569	-560 8 -570 3 -550 -560 -567 -570				-552 14 -570 10 -532 -550 -570 -570
		-520 -520 -520 4 -520 -520 -520 -520	-557 9 -570 3 -550 -550 -564 -569				-545 20 -580 13 -520 -550 -570 -578
		-510 1	-550 -550 -550 2 -550 -550 -550 -550				-545 19 -570 8 -511 -550 -559 -569
			-565 5 -570 2 -560 -565 -568 -570				-560 12 -580 7 -541 -560 -570 -579
			-570 10 -580 2 -560 -570 -577 -580				-560 12 -580 4 -550 -555 -570 -579
			-550 1				-550 -550 -550 3 -550 -550 -550 -550
							-560 14 -580 3 -550 -550 -570 -579
							-527 26 -550 3 -492 -540 -547 -550
							-554 27 -580 5 -512 -560 -580 -580

70 N

60

50

40

30

20

10

0

10

20

30

488

201

150W

120W

90W

60W

30W

0

30E

LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 410

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N										70 N
	-500 1	-500 1								
60		-517 5 -520 3 -510 -520 -520 -520			-520 -520 -520 2 -520 -520 -520 -520	-537 9 -550 3 -530 -530 -544 -549				
	-600 1	-543 5 -550 3 -540 -540 -547 -550	-590 1		-535 5 -540 2 -530 -535 -538 -540					
50	-625 59 -719 4 -563 -610 -667 -713	-517 17 -540 3 -500 -510 -530 -539	-566 62 -640 5 -501 -540 -640 -640	-510 1						
	-657 58 -740 6 -566 -655 -718 -737	-571 69 -689 12 -442 -575 -630 -683	-573 72 -690 18 -480 -560 -643 -690		-550 1	-615 39 -650 4 -554 -630 -645 -649				
40	-592 53 -660 5 -532 -570 -654 -659	-542 47 -600 11 -452 -550 -584 -598	-578 48 -649 11 -492 -590 -620 -644							
		-553 5 -560 3 -550 -550 -557 -560	-628 35 -660 5 -566 -640 -654 -659							
30	-585 5 -590 2 -580 -585 -588 -590									
20			-620 1							
10										
0										
10										
20										
30										
40 S										

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

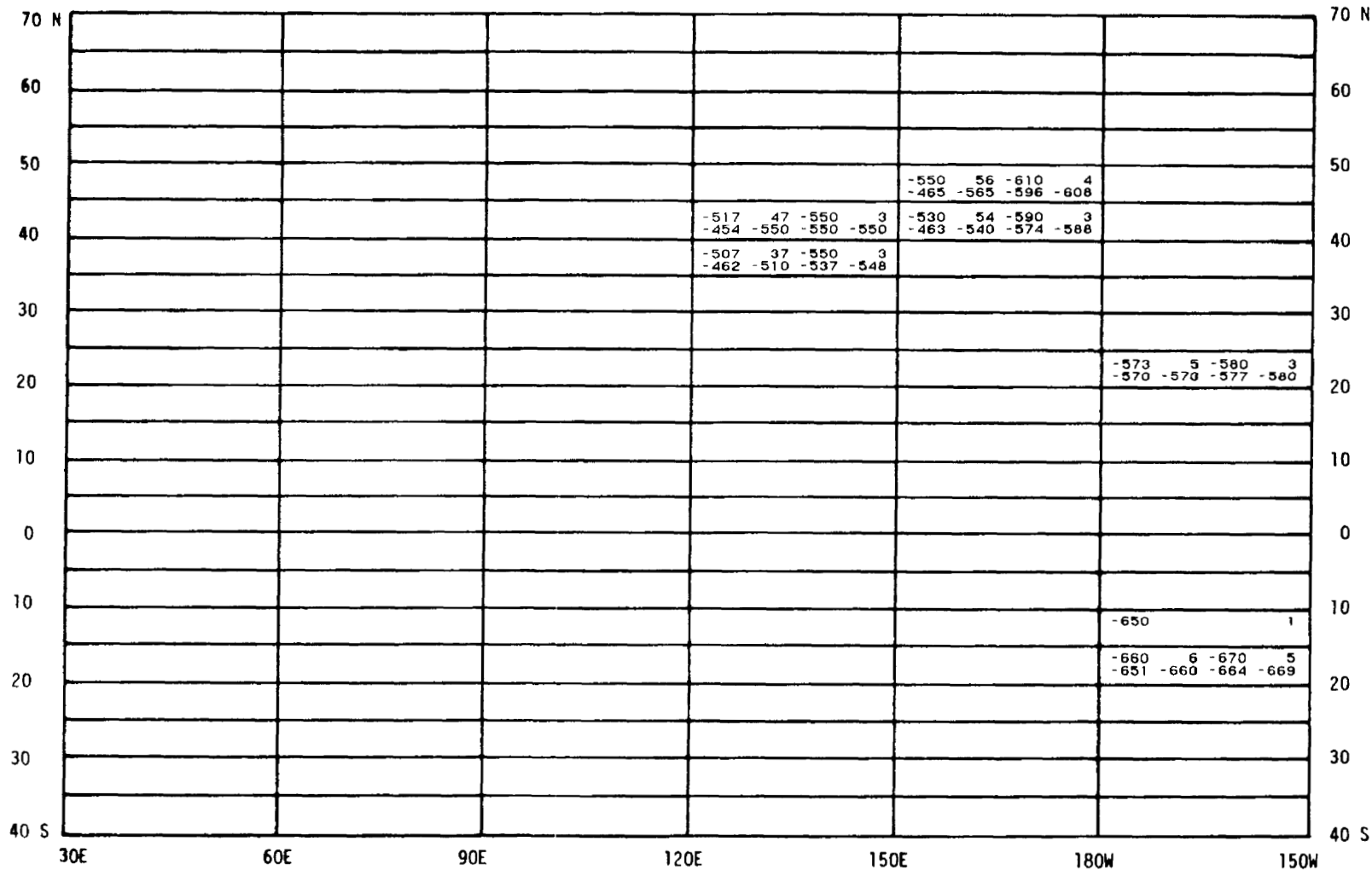
## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH

FL 430

LAT.





**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MARCH  
FL 430

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

**70 N**

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

403

150W

120W

90W

**60W**

30W

0

30E

LONGITUDE

205

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

FL 270

LAT.

70 N						70 N
60						60
50						50
40	-457 12 -470 3 -441 -460 -467 -470					40
	-375 5 -380 2 -370 -375 -378 -380			-357 49 -457 31 -268 -350 -412 -442		
30	-397 39 -450 3 -361 -380 -428 -447			-350 1		30
	-323 5 -330 3 -320 -320 -327 -330	-310 12 -330 4 -300 -305 -320 -329		-275 15 -290 2 -261 -275 -285 -289		
20	-270 1		-246 10 -260 5 -231 -250 -254 -259		-305 27 -350 47 -258 -310 -330 -350	20
		-277 12 -290 3 -261 -280 -287 -290	-233 9 -240 3 -221 -240 -240 -240		-280 36 -310 3 -233 -300 -307 -310	
10			-215 5 -220 2 -210 -215 -218 -220	-217 17 -240 3 -200 -210 -230 -239		10
0			-210 1			0
			-200 1			
10						10
				-220 1		
20					-224 22 -250 5 -192 -230 -244 -249	20
30			-320 1			30
			-333 12 -350 3 -320 -330 -344 -349	-347 5 -350 3 -340 -350 -350 -350	-360 24 -380 10 -312 -370 -380 -380	
40 S				-348 27 -390 6 -312 -345 -374 -388	-355 40 -400 4 -311 -355 -395 -399	40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APRIL  
FL 270

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

70 N								70 N	
60								60	
50						-419 34 -470 7 -365 -410 -460 -469	-464 14 -480 5 -450 -460 -480 -480	-438 36 -480 12 -369 -450 -472 -480	50
	-447 25 -490 7 -411 -450 -471 -488						-436 36 -480 10 -361 -440 -466 -478	-441 32 -490 17 -369 -440 -470 -487	
40	-390 10 -400 2 -380 -390 -397 -400	-396 28 -449 10 -345 -395 -416 -445	-392 48 -489 49 -300 -390 -440 -480				-420 30 -479 7 -382 -410 -442 -475	-398 45 -488 71 -304 -400 -440 -480	40
	-372 30 -455 40 -328 -370 -400 -429	-408 55 -489 4 -342 -400 -456 -486	-399 38 -450 7 -351 -390 -440 -449				-350 1	-370 42 -482 85 -287 -370 -420 -460	
30	-365 30 -430 15 -330 -370 -380 -427	-359 34 -448 34 -320 -350 -387 -437						-362 34 -450 53 -320 -360 -387 -449	30
								-307 21 -330 9 -265 -310 -327 -330	
20			-280 1					-299 31 -350 54 -231 -300 -330 -350	20
	-230 1							-260 31 -310 10 -222 -250 -296 -308	
10	-270 1	-228 30 -270 10 -184 -220 -266 -270						-227 28 -270 16 -186 -215 -266 -270	10
		-255 15 -270 2 -241 -255 -265 -269						-255 15 -270 2 -241 -255 -265 -269	
0								-210 1	0
								-200 1	
10								-220 1	10
								-224 22 -250 5 -192 -230 -244 -249	
20				-295 25 -320 2 -271 -295 -312 -319				-295 25 -320 2 -271 -295 -312 -319	20
								-320 1	
30								-353 22 -380 16 -313 -355 -376 -380	30
								-351 33 -400 10 -310 -345 -390 -398	
40 S									40 S
150W	120W	90W	60W	30W	0	30E			

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 290

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N
60						60
50						50
40	-452 7 -460 6 -441 -450 -460 -460					40
	-461 23 -500 9 -432 -450 -487 -498			-395 44 -509 33 -329 -390 -430 -504	-460 1	
30	-415 31 -479 6 -382 -405 -432 -474			-372 30 -400 6 -316 -380 -392 -399		-410 1
	-340 1	-360 16 -380 4 -341 -360 -375 -379		-320 16 -340 3 -301 -320 -334 -339		-413 4 -420 4 -410 -410 -415 -419
20		-298 12 -320 5 -290 -290 -307 -318	-260 1			-358 30 -430 48 -289 -350 -380 -430
		-292 18 -310 5 -262 -290 -310 -310	-300 20 -320 2 -281 -300 -314 -319	-273 15 -290 4 -251 -275 -285 -289		-333 43 -380 6 -256 -350 -364 -378
10		-295 5 -300 2 -290 -295 -298 -300	-287 25 -320 3 -261 -280 -307 -318	-247 9 -260 6 -231 -250 -252 -259		-233 8 -240 4 -221 -235 -240 -240
			-290 1			-250 1
0			-265 5 -270 2 -260 -265 -268 -270			
			-280 2 -280 -280 -280 -280			
10			-285 5 -290 2 -280 -285 -288 -290			
			-280 2 -280 -280 -280 -280	-265 15 -280 2 -251 -265 -275 -279		
20				-280 2 -280 -280 -280 -280	-263 21 -290 3 -241 -260 -280 -289	
			-320 21 -350 4 -300 -315 -340 -349	-290 1	-278 39 -339 4 -241 -265 -311 -336	
30			-347 17 -370 6 -321 -350 -362 -369		-350 42 -410 6 -292 -350 -394 -408	
			-373 25 -400 3 -342 -380 -394 -399	-377 21 -400 3 -351 -380 -394 -399	-393 33 -468 16 -329 -400 -410 -458	
40 S				-410 16 -440 6 -391 -405 -424 -438	-420 1	
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APRIL  
FL 290

TABULATED TEMPERATURES = °C \* 10

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

ADJUSTED TEMPERATURES									
70 N									
	-480	1							-480 1
60									
		-470	1		-380 -380 -380 2 -380 -380 -380 -380	-474 35 -510 17 -396 -480 -504 -510	-481 25 -510 13 -427 -490 -501 -510	-471 38 -510 33 -380 -480 -500 -510	
50	-461 28 -519 13 -417 -460 -482 -515	-457 12 -470 3 -441 -460 -467 -470	-470	1	-430 37 -470 3 -382 -440 -460 -469	-450 22 -480 3 -430 -440 -467 -478	-447 37 -519 10 -394 -445 -481 -515	-453 32 -520 33 -386 -460 -479 -520	
	-423 37 -480 6 -380 -425 -456 -477	-440 20 -489 8 -421 -435 -440 -483	-426 42 -520 71 -340 -430 -470 -516				-452 32 -510 12 -391 -450 -477 -508	-431 40 -520 103 -340 -440 -470 -510	
40	-422 27 -478 33 -370 -430 -440 -467	-416 24 -460 12 -380 -410 -442 -458	-410 38 -460 6 -346 -410 -444 -458				-400	1	-415 39 -507 95 -340 -420 -450 -500
	-412 23 -469 17 -373 -410 -430 -460	-413 32 -480 37 -360 -410 -450 -480	-420	1					-409 32 -480 68 -360 -410 -440 -480
30	-400 20 -420 2 -381 -400 -414 -419	-390 10 -400 2 -380 -390 -397 -400	-330	1					-371 37 -420 17 -308 -380 -410 -420
		-360	1	-322 21 -350 6 -291 -325 -342 -349					-348 35 -430 61 -282 -350 -380 -428
20		-267 9 -280 3 -260 -260 -274 -279	-300	1					-298 38 -379 21 -250 -290 -344 -372
				-285 17 -300 4 -261 -290 -300 -300					-283 28 -319 19 -224 -260 -300 -313
10				-273 11 -290 4 -261 -270 -280 -289					-272 15 -290 6 -251 -270 -290 -290
				-280	1				-270 8 -280 3 -260 -270 -277 -280
0									-280 -280 -280 2 -280 -280 -280 -280
									-285 5 -290 2 -280 -285 -288 -290
10									-273 13 -280 4 -252 -280 -280 -280
					-310	1			-277 22 -310 6 -242 -280 -294 -308
20					-333 15 -350 4 -311 -335 -345 -349				-308 35 -350 13 -242 -310 -341 -350
									-348 32 -409 12 -294 -350 -375 -406
30									-388 32 -467 22 -328 -385 -410 -453
									-411 16 -440 7 -391 -410 -421 -438
40 S									
150W	120W	90W	60W	30W	0	30E			
LONGITUDE									

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

FL 310

LAT.

70 N

70 N							70 N
60							60
					-460	1	-473 33 -520 4 -432 -470 -501 -518
50					-520 16 -540 3 -501 -520 -534 -539	-460	1
					-565 25 -590 2 -541 -565 -582 -589		
40	-480 20 -500 2 -461 -480 -494 -499			-555 45 -600 2 -512 -555 -586 -598	-600	1	
	-483 31 -530 15 -417 -480 -508 -530			-442 40 -530 35 -377 -430 -480 -530	-470 10 -480 2 -460 -470 -477 -480		
30	-458 37 -519 12 -390 -465 -490 -513			-432 23 -460 6 -400 -440 -452 -459			
	-421 29 -460 10 -380 -420 -456 -460	-413 22 -450 11 -382 -410 -434 -448		-370 23 -370 2 -370 -370 -370 -370			
20	-387 35 -459 6 -352 -375 -404 -453	-366 16 -390 10 -334 -370 -380 -388	-345 13 -370 6 -331 -340 -354 -368	-370	1		-403 28 -458 61 -360 -400 -440 -450
		-338 9 -350 6 -322 -340 -342 -349	-341 15 -360 7 -321 -340 -360 -360		-330	1	-365 21 -390 8 -331 -375 -380 -389
10		-328 4 -330 4 -321 -330 -330 -330	-333 16 -360 4 -320 -325 -346 -358	-313 16 -349 10 -292 -310 -326 -346			-322 4 -330 5 -320 -320 -324 -329
		-330	1	-328 4 -330 4 -321 -330 -330 -330			-319 12 -330 7 -300 -320 -330 -330
0		-310	1	-325 5 -330 2 -320 -325 -328 -330			-321 14 -349 7 -302 -320 -321 -346
		-310 -310 -310 -310	2	-327 5 -330 3 -320 -330 -330 -330			-312 7 -320 5 -301 -310 -320 -320
10			-325 9 -330 4 -311 -330 -330 -330	-325 5 -330 2 -320 -325 -328 -330	-310	1	-310 -310 -310 3 -310 -310 -310 -310
			-330 10 -340 2 -320 -330 -337 -340	-333 15 -350 4 -311 -335 -345 -349	-313 5 -320 3 -310 -310 -317 -320	-320	1
20				-370	1	-320 19 -359 6 -301 -315 -328 -356	
			-390 -390 -390 -390	-375 5 -380 2 -370 -375 -378 -380			
30				-415 18 -440 4 -391 -415 -430 -439	-340 51 -409 3 -291 -320 -381 -406		
			-450 30 -480 2 -421 -450 -470 -479	-463 31 -500 7 -406 -460 -490 -499	-431 45 -480 15 -325 -440 -470 -480		
40 S				-470 42 -510 7 -410 -480 -510 -510	-474 12 -490 5 -460 -480 -484 -489		
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APRIL  
FL 310

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN	LAT
------	-----

70 N

LAT

70 N										70 N
	-480								-480	1
60		-487 17 -510 3 -470 -480 -500 -509				-520 14 -530 3 -501 -530 -530 -530			-488 31 -530 11 -436 -480 -524 -530	60
	-502 23 -540 6 -471 -505 -516 -537	-505 15 -520 2 -491 -505 -515 -519				-500 26 -540 24 -455 -500 -530 -540	-511 27 -540 9 -462 -520 -537 -540	-503 28 -540 45 -459 -500 -530 -540		50
50	-517 30 -560 15 -466 -510 -555 -560	-497 21 -520 3 -471 -500 -514 -519	-510	1	-505 15 -520 2 -491 -505 -515 -519	-508 33 -550 4 -471 -505 -540 -549	-504 25 -530 7 -456 -510 -530 -530	-513 31 -587 34 -457 -510 -540 -540		40
	-500 25 -540 12 -454 -500 -530 -538	-478 27 -529 26 -420 -480 -510 -525	-475 40 -548 68 -400 -480 -510 -540				-490 26 -530 5 -452 -490 -511 -528	-481 39 -600 116 -400 -480 -510 -547		30
40	-470 23 -510 33 -419 -470 -490 -510	-474 37 -529 11 -404 -480 -504 -526	-460 30 -490 2 -431 -460 -480 -489				-450	1	-462 36 -530 99 -400 -460 -500 -530	20
	-466 23 -519 20 -440 -460 -490 -516	-452 20 -490 15 -430 -450 -468 -490							-456 28 -520 53 -390 -450 -487 -520	10
30	-452 37 -510 5 -402 -450 -484 -507	-450	1						-421 33 -507 29 -370 -420 -450 -488	0
	-370	1	-380	1	-377 5 -380 3 -370 -380 -380 -380				-392 32 -460 89 -338 -380 -430 -452	70 S
20		-343 25 -370 3 -312 -350 -364 -369	-325 15 -340 4 -310 -325 -340 -340						-345 22 -389 29 -310 -340 -370 -384	60 S
			-320 14 -340 10 -294 -320 -336 -340						-321 15 -359 33 -290 -320 -330 -354	50 S
10			-345 5 -350 2 -340 -345 -348 -350						-326 13 -350 14 -300 -330 -330 -347	40 S
			-330	1	-360	1			-325 16 -360 12 -302 -320 -335 -358	30 S
0					-340 5 -340 2 -340 -340 -340 -340				-320 12 -340 12 -302 -320 -332 -340	20 S
					-345 5 -350 2 -340 -345 -348 -350				-323 13 -350 12 -310 -325 -332 -348	10 S
10					-350 5 -350 2 -350 -350 -350 -350				-329 16 -350 12 -310 -325 -350 -350	0
					-355 5 -360 2 -350 -355 -358 -360				-333 25 -370 9 -302 -320 -360 -368	70 N
20					-333 9 -340 3 -321 -340 -340 -340				-361 26 -390 7 -322 -370 -390 -390	60 N
									-383 52 -440 7 -294 -410 -421 -438	50 N
30									-442 43 -499 24 -341 -450 -480 -495	40 N
									-472 33 -510 12 -410 -480 -510 -510	30 N
40 S										20 N
	150W	120W	90W	60W	30W	0	30E			10 N

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

FL 330

LAT.

[illegible]

LONGITUDE





MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APRIL

FL 350

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL  
FL 350

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-576 34 -620 5 -523 -590 -601 -618	-485 25 -510 2 -461 -485 -502 -509	-537 48 -609 6 -480 -540 -578 -606	-552 47 -620 13 -475 -550 -610 -618	-530 40 -570 2 -492 -530 -557 -568		-547 49 -620 28 -465 -555 -604 -620	70 N
60	-556 45 -630 16 -486 -555 -602 -627	-553 47 -619 22 -474 -570 -600 -616	-520 10 -530 2 -510 -520 -527 -530	-585 5 -590 2 -580 -585 -588 -590	-580 41 -630 3 -532 -580 -614 -628		-554 46 -630 47 -479 -560 -600 -630	60
50	-536 69 -620 5 -471 -490 -620 -620	-559 50 -639 38 -467 -565 -610 -633	-508 29 -540 4 -463 -515 -530 -539	-590 -590 -590 -590 -590 -590 -590 -590	-565 32 -590 4 -514 -580 -585 -589		-558 51 -640 62 -462 -565 -610 -638	50
40	-536 32 -570 14 -473 -545 -569 -570	-583 42 -640 38 -477 -590 -611 -640	-557 52 -649 17 -480 -560 -610 -640	-548 47 -619 30 -416 -560 -580 -614	-557 34 -628 39 -485 -560 -589 -615	-550 42 -610 10 -474 -560 -587 -608	-555 48 -659 181 -450 -560 -600 -640	40
30	-551 40 -619 28 -475 -565 -587 -615	-570 38 -638 18 -490 -580 -600 -630	-564 59 -649 44 -409 -575 -620 -641	-536 46 -590 28 -416 -550 -570 -590	-561 21 -609 11 -532 -560 -574 -604	-573 43 -620 15 -476 -590 -608 -620	-556 50 -645 181 -426 -570 -600 -640	30
20	-561 43 -610 36 -462 -570 -600 -610	-550 32 -599 46 -479 -560 -580 -591	-544 48 -620 84 -427 -560 -590 -607	-480 40 -520 2 -442 -480 -507 -518		-585 34 -630 19 -514 -590 -620 -630	-552 43 -630 250 -440 -560 -590 -620	20
10	-556 30 -610 99 -490 -560 -590 -600	-537 38 -590 46 -439 -540 -570 -590	-538 45 -580 13 -424 -550 -562 -580			-540 20 -560 2 -521 -540 -554 -559	-548 33 -620 229 -460 -550 -580 -610	10
0	-542 25 -600 127 -490 -540 -570 -590	-532 33 -570 13 -452 -550 -551 -568	-500 1				-538 27 -600 171 -480 -540 -570 -590	0
10 S	-528 25 -577 99 -480 -530 -550 -570	-513 13 -520 4 -492 -520 -520 -520	-505 5 -510 2 -500 -505 -508 -510				-516 32 -575 174 -440 -520 -550 -570	10 S
20 S	-504 29 -550 25 -460 -510 -532 -550	-484 15 -510 8 -461 -480 -499 -509	-478 16 -490 4 -452 -485 -490 -490				-490 32 -550 180 -420 -490 -520 -544	20 S
30 S	-473 22 -519 6 -460 -460 -488 -516	-453 16 -480 8 -424 -450 -468 -479	-443 17 -460 3 -421 -450 -457 -460				-442 20 -513 77 -420 -440 -460 -485	30 S
40 S	-453 5 -460 3 -450 -450 -457 -460		-441 17 -479 27 -405 -440 -460 -475	-460 1			-431 15 -477 88 -407 -430 -440 -463	40 S
	-440 10 -450 2 -430 -440 -447 -450		-440 10 -450 2 -430 -440 -447 -450	-450 -450 -450 -450 -450 -450 -450 -450			-432 12 -450 22 -420 -430 -450 -450	
	-430 1		-437 9 -450 3 -430 -430 -444 -449	-455 5 -460 2 -450 -455 -458 -460			-427 14 -459 19 -410 -420 -450 -456	
			-430 10 -440 2 -420 -430 -437 -440	-455 11 -470 4 -441 -455 -465 -469			-422 19 -469 28 -390 -420 -440 -465	
			-430 1	-437 11 -460 6 -430 -430 -444 -456			-417 16 -459 25 -390 -420 -430 -450	
				-447 12 -470 10 -432 -440 -460 -468			-425 21 -469 26 -395 -420 -440 -465	
				-458 15 -480 11 -432 -460 -470 -478			-438 22 -479 29 -401 -440 -460 -474	
				-468 4 -470 4 -461 -470 -470 -470			-444 24 -507 31 -400 -440 -462 -492	
							-460 38 -529 24 -395 -470 -490 -521	
							-510 26 -558 28 -450 -510 -540 -549	
							-534 31 -570 15 -455 -540 -550 -567	

LONGITUDE

FL 370

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL  
FL 370

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-543 62 -620 9 -462 -520 -617 -620	-470 -470 -470 -470 2 -470 -470 -470 -470	-488 39 -540 4 -450 -480 -526 -538	-493 5 -500 3 -490 -490 -497 -500	-510 1	-514 55 -620 19 -450 -500 -592 -620	70 N
60	-538 60 -659 38 -455 -530 -610 -653	-538 47 -639 23 -464 -530 -585 -636	-490 1	-598 31 -649 4 -571 -585 -621 -646	-554 30 -600 5 -512 -550 -581 -598	-542 55 -658 83 -460 -540 -609 -650	60
50	-565 62 -649 34 -460 -585 -630 -643	-560 61 -668 28 -461 -565 -627 -659	-510 73 -609 3 -442 -480 -568 -605	-462 35 -529 5 -431 -450 -485 -524	-572 47 -640 10 -497 -550 -626 -638	-556 64 -676 130 -446 -550 -630 -670	50
40	-565 59 -640 17 -453 -570 -624 -637	-518 62 -629 10 -445 -500 -596 -625	-548 61 -629 5 -449 -560 -585 -624	-558 73 -640 16 -440 -585 -630 -640	-585 58 -659 33 -466 -600 -640 -654	-561 68 -690 143 -440 -570 -630 -670	40
30	-590 54 -649 32 -466 -610 -640 -644	-544 73 -640 14 -426 -525 -629 -640	-550 70 -630 21 -424 -580 -618 -630	-560 58 -650 29 -468 -570 -615 -650	-566 51 -640 12 -471 -570 -630 -638	-575 54 -639 10 -465 -585 -616 -636	30
20	-596 42 -640 45 -505 -610 -630 -640	-577 43 -647 103 -480 -590 -617 -640	-570 47 -648 54 -480 -580 -610 -639			-565 57 -620 8 -460 -585 -619 -620	20
10	-583 38 -647 93 -499 -590 -620 -640	-579 33 -638 84 -477 -590 -610 -623	-585 19 -610 8 -553 -585 -608 -610			-640 1	10
0	-578 29 -630 172 -510 -580 -610 -620	-545 49 -600 14 -483 -565 -580 -600	-574 16 -600 5 -552 -570 -587 -598				0
10 S	-565 22 -616 148 -529 -570 -590 -610		-562 23 -590 6 -523 -565 -582 -589			-557 31 -620 213 -472 -560 -580 -610	10 S
20 S	-549 20 -589 48 -508 -550 -570 -581	-517 25 -550 3 -491 -510 -537 -548	-521 23 -550 8 -483 -525 -548 -550			-532 31 -590 200 -470 -540 -560 -580	20 S
30 S	-525 5 -530 2 -520 -525 -528 -530	-515 23 -550 10 -482 -515 -540 -548	-502 21 -549 10 -480 -500 -515 -545			-497 21 -550 61 -470 -490 -520 -548	30 S
40 S	-502 17 -530 5 -481 -500 -517 -528	-530 1	-490 16 -529 24 -470 -480 -510 -525	-507 9 -520 3 -500 -500 -514 -519		-486 18 -530 69 -460 -480 -501 -530	40 S
50 S	-495 15 -510 2 -481 -495 -505 -509		-495 9 -500 4 -481 -500 -500 -500	-498 11 -520 6 -490 -495 -504 -518		-487 17 -520 27 -465 -490 -500 -520	50 S
60 S	-500 1		-500 -500 -500 -500 2 -500 -500 -500 -500	-497 7 -510 7 -490 -500 -500 -509		-494 17 -538 26 -470 -490 -510 -530	60 S
70 S	-495 5 -500 2 -490 -495 -498 -500			-496 13 -510 12 -472 -500 -510 -510		-493 16 -520 33 -470 -490 -510 -520	70 S
80 S	-510 1			-500 9 -510 12 -482 -500 -510 -510		-497 15 -529 32 -466 -500 -510 -524	80 S
90 S				-507 13 -520 13 -482 -510 -520 -520		-502 14 -529 29 -476 -500 -520 -524	90 S
100 S				-511 11 -530 12 -492 -510 -520 -528		-512 11 -530 24 -490 -510 -520 -530	100 S
110 S				-504 18 -530 8 -480 -505 -520 -529		-505 26 -568 19 -461 -500 -531 -559	110 S
120 S						-502 32 -550 5 -453 -510 -524 -547	120 S
130 S						-541 40 -590 17 -442 -550 -570 -587	130 S
140 S						-560 48 -590 9 -449 -580 -590 -590	140 S

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

FL 390

LAT.

70 N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</
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LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL  
FL 390

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

60

50

40

30

20

10

0

10

20

30

40 S

-549 46 -650 16 -500 -540 -590 -647						-549 45 -650 17 -500 -550 -582 -647
-543 54 -649 32 -460 -530 -600 -644	-556 61 -630 7 -475 -520 -630 -630			-550 50 -600 2 -502 -550 -584 -598		-537 56 -670 88 -460 -520 -600 -663
-534 49 -648 22 -468 -520 -570 -642	-559 64 -650 20 -454 -555 -630 -650	-490 70 -560 2 -423 -490 -538 -557	-508 44 -560 5 -444 -500 -554 -559	-543 48 -639 9 -480 -550 -582 -632		-525 56 -690 139 -440 -510 -570 -660
-503 35 -589 9 -462 -500 -534 -565	-577 47 -660 15 -506 -580 -628 -657	-556 65 -678 7 -458 -550 -584 -668	-493 50 -608 11 -424 -500 -522 -596	-547 53 -620 11 -466 -540 -614 -620	-572 45 -659 6 -514 -565 -596 -652	-540 59 -673 126 -440 -540 -600 -660
-590 63 -670 23 -469 -610 -640 -670	-581 62 -670 21 -490 -580 -660 -670	-553 76 -670 30 -446 -545 -650 -670	-493 53 -570 6 -432 -475 -562 -569	-660 1	-578 33 -630 4 -550 -565 -606 -627	-582 69 -685 161 -442 -590 -650 -680
-604 54 -680 36 -498 -605 -664 -680	-601 55 -680 82 -472 -620 -650 -674	-558 74 -678 42 -429 -555 -650 -664	-613 33 -650 3 -572 -620 -640 -649			-599 61 -692 273 -460 -620 -650 -680
-617 48 -680 63 -487 -630 -661 -678	-597 47 -675 81 -486 -610 -640 -660	-602 32 -630 5 -546 -610 -624 -629				-602 49 -680 206 -480 -610 -650 -670
-620 28 -669 46 -570 -620 -650 -661	-589 42 -640 14 -488 -590 -629 -637	-590 1				-612 33 -668 65 -548 -610 -648 -660
-611 29 -659 30 -550 -615 -640 -654	-612 7 -620 5 -601 -610 -620 -620	-605 5 -610 2 -600 -605 -608 -610				-599 31 -658 58 -550 -605 -630 -650
-560 21 -628 32 -536 -560 -570 -618	-577 9 -590 3 -570 -570 -584 -589	-569 19 -600 10 -542 -565 -591 -600				-564 25 -628 83 -530 -560 -590 -620
	-560 10 -570 2 -550 -560 -567 -570	-545 13 -570 11 -530 -540 -560 -568				-541 14 -570 23 -520 -540 -555 -570
-570 1		-540 13 -560 7 -521 -540 -550 -559	-553 5 -560 3 -550 -550 -557 -560			-546 14 -570 16 -523 -545 -560 -570
-560 1		-547 17 -570 3 -530 -540 -560 -569	-552 4 -560 5 -550 -550 -554 -559			-555 11 -570 14 -533 -560 -560 -570
		-550 10 -560 2 -540 -550 -557 -560	-548 7 -560 8 -540 -550 -550 -559			-551 8 -560 16 -540 -550 -560 -560
			-549 9 -560 9 -540 -550 -560 -560			-549 10 -560 14 -533 -550 -560 -560
-560 1			-554 10 -570 5 -541 -550 -564 -569			-554 13 -570 11 -532 -550 -570 -570
-555 5 -560 2 -550 -555 -558 -560			-556 8 -570 5 -550 -550 -564 -569			-552 16 -570 14 -513 -550 -560 -570
-560 1			-555 5 -560 4 -550 -555 -560 -560			-543 25 -570 15 -498 -550 -560 -570
			-550 10 -560 2 -540 -550 -557 -560			-535 25 -560 12 -500 -540 -560 -560
						-538 35 -590 12 -490 -545 -572 -588
						-571 39 -620 14 -490 -575 -610 -617
						-577 39 -629 9 -503 -560 -600 -625

70 N

60

50

40

30

20

10

0

10

20

30

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

# STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

FL 410

LAT.

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LONGITUDE

220



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL  
FL 410

LAT.   
TABULATED TEMPERATURES = °C \* 10

MEAN LAT

70 N							
	-520	1					-490 30 -520 2 -461 -490 -510 -519
60	-576 80 -680 5 -472 -590 -654 -677		-530	1			-524 57 -677 25 -450 -520 -580 -661
	-594 66 -690 8 -490 -585 -674 -689	-587 84 -699 3 -502 -560 -655 -694	-550 47 -810 6 -491 -550 -602 -609	-600 30 -630 2 -571 -600 -620 -629			-547 59 -698 61 -452 -550 -604 -688
50	-700 10 -710 4 -690 -700 -710 -710	-573 55 -690 16 -492 -555 -610 -690	-583 68 -690 18 -493 -575 -656 -690	-530 59 -629 6 -470 -520 -662 -624	-598 51 -680 8 -533 -585 -663 -679	-568 48 -639 5 -511 -580 -608 -636	-567 67 -710 106 -461 -550 -650 -690
	-624 72 -710 35 -487 -630 -700 -710	-599 44 -669 26 -530 -605 -640 -665	-604 66 -699 26 -495 -605 -690 -695	-513 61 -599 3 -470 -470 -558 -595		-575 35 -610 2 -541 -575 -599 -609	-587 68 -710 150 -470 -580 -670 -710
40	-617 67 -709 25 -474 -630 -682 -705	-561 64 -680 17 -466 -550 -638 -677	-614 40 -679 5 -562 -620 -642 -675			-550 10 -560 2 -540 -550 -557 -560	-601 63 -708 71 -468 -610 -668 -696
	-648 35 -680 10 -590 -665 -678 -680	-573 34 -620 3 -541 -560 -601 -618	-645 25 -670 2 -621 -645 -662 -669			-560	-626 45 -680 25 -545 -650 -670 -680
30	-644 35 -680 7 -576 -650 -670 -679		-650 10 -660 2 -640 -650 -657 -660				-633 34 -680 19 -570 -640 -670 -680
	-636 21 -670 5 -611 -640 -651 -668		-640 16 -660 3 -621 -640 -654 -659				-616 32 -670 20 -564 -615 -659 -670
20	-603 24 -620 3 -572 -620 -620 -620		-610 14 -620 3 -591 -620 -620 -620				-606 23 -650 19 -574 -600 -624 -650
	-610 -610 -610 -610 -610						-601 8 -610 10 -590 -600 -610 -610
10							-608 8 -620 4 -600 -605 -615 -618
			-600	1			-603 5 -610 3 -600 -600 -607 -610
0			-605 5 -610 2 -600 -605 -608 -610				-605 5 -610 2 -600 -605 -608 -610
			-600	1			-600
10			-605 5 -610 2 -600 -605 -608 -610				-605 5 -610 2 -600 -605 -608 -610
			-605 5 -610 2 -600 -605 -608 -610				-613 12 -630 3 -600 -610 -624 -629
20			-610	1			-617 17 -640 3 -600 -610 -630 -639
							-585 5 -590 2 -580 -585 -588 -590
30							-602 7 -610 5 -591 -600 -610 -610
							-598 16 -610 11 -564 -610 -610 -610
40 S							

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL

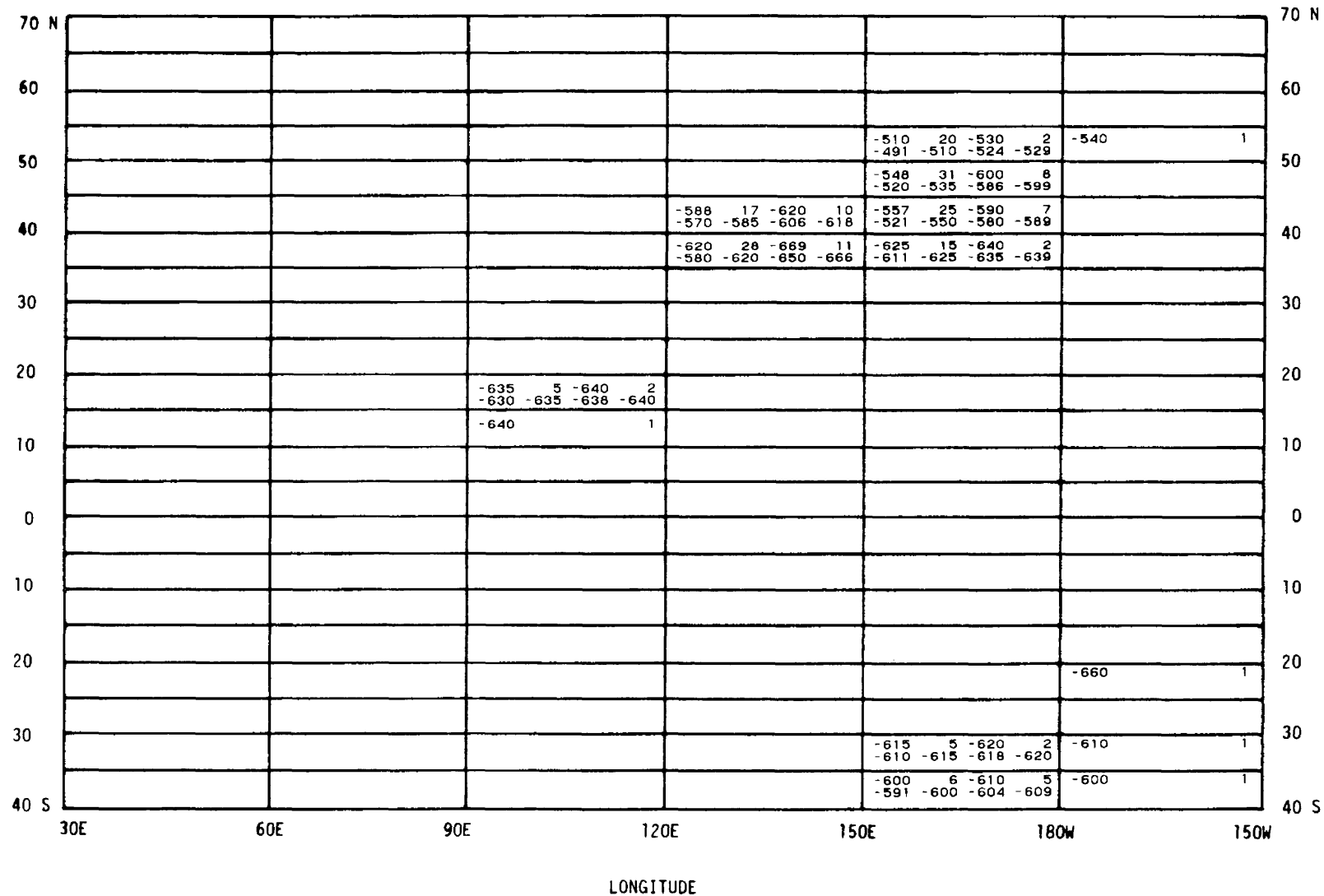
FL 430

CODE :

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

APRIL  
FL 430

LAT.	TABULATED TEMPERATURES = °C * 10										MEAN	LAT
70 N												70 N
60												60
50											-520 22 -540 3 -492 -530 -537 -540	50
40											-548 49 -610 14 -450 -555 -599 -610	40
30											-586 47 -699 35 -507 -590 -626 -693	30
20											-611 41 -869 19 -512 -610 -650 -663	20
10											-615 5 -620 2 -610 -615 -618 -620	10
0											-620 29 -660 3 -591 -610 -644 -658	0
10 S												10 S
20 S												20 S
30 S												30 S
40 S												40 S

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY

FL 270

LAT.

70 N						70 N
60						60
50						50
40						40
	-366 31 -400 5 -322 -380 -394 -399			-317 41 -389 17 -260 -320 -360 -384		
30	-355 25 -380 2 -331 -355 -372 -379			-273 34 -320 8 -230 -280 -300 -317		
	-300 16 -320 4 -281 -300 -315 -319	-300 22 -330 3 -280 -290 -317 -328		-205 5 -210 2 -200 -205 -208 -210		
20	-265 25 -290 2 -241 -265 -282 -289	-257 5 -260 3 -250 -260 -260 -260	-213 25 -240 3 -182 -220 -234 -239		-294 26 -370 38 -250 -290 -320 -370	
		-233 21 -260 3 -211 -230 -250 -259	-233 21 -260 3 -211 -230 -250 -259	-180 1	-260 20 -280 2 -241 -260 -274 -279	
10			-214 14 -240 5 -201 -210 -221 -238	-235 29 -270 13 -185 -250 -261 -270		
0			-233 8 -240 4 -221 -235 -240 -240			
			-247 12 -260 3 -231 -250 -257 -260			
10						
					-232 27 -280 5 -202 -220 -254 -277	
20				-230 20 -250 2 -211 -230 -244 -249	-245 15 -260 2 -231 -245 -255 -259	
30						
			-343 29 -380 3 -311 -340 -367 -378	-355 15 -370 2 -341 -355 -365 -369	-352 32 -380 6 -302 -365 -380 -380	
40 S				-388 27 -430 6 -360 -385 -414 -428	-377 56 -479 6 -312 -365 -424 -473	
	30E	60E	90E	120E	150E	180W
						150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY  
FL 270

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

LAT.	70 N	60	50	40	30	20	10	0	10	20	30	40 S
LONGITUDE	150W	120W	90W	60W	30W	0	30E					
70 N												
60												
50						-418 34 -469 12 -364 -425 -450 -466	-392 36 -440 15 -318 -390 -435 -440	-403 37 -468 27 -326 -400 -440 -460				
40	-410 29 -440 3 -372 -420 -434 -439	-390 1					-382 32 -430 5 -350 -370 -417 -428	-392 32 -440 9 -350 -390 -427 -438				
30	-360 1	-332 37 -390 14 -260 -330 -378 -387	-358 47 -475 39 -288 -350 -400 -450				-343 18 -360 4 -321 -345 -360 -360	-351 44 -473 58 -281 -350 -400 -439				
20	-349 36 -438 30 -296 -340 -380 -428	-363 26 -400 3 -340 -350 -384 -398	-320 1				-370 35 -400 4 -314 -385 -395 -399	-343 41 -436 60 -260 -340 -386 -420				
10	-355 32 -428 11 -312 -360 -374 -420	-334 36 -390 32 -266 -340 -370 -390						-330 43 -424 53 -230 -330 -370 -390				
0								-279 43 -330 9 -202 -290 -317 -328				
10		-230 1						-284 34 -370 47 -217 -280 -310 -370				
20		-250 1						-235 28 -279 10 -185 -235 -260 -278				
30		-230 -230 -230 -230 2	-231 19 -260 9 -202 -240 -247 -258					-230 24 -270 29 -191 -230 -260 -270				
40			-236 5 -240 5 -230 -240 -240 -240					-236 5 -240 5 -230 -240 -240 -240				
50								-233 8 -240 4 -221 -235 -240 -240				
60								-247 12 -260 3 -231 -250 -257 -260				
70												
80												
90												
100												
110												
120												
130												
140												
150												

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY

FL 290

LAT.

70 N						70 N
60						60
50						50
40	-393 28 -430 6 -360 -395 -422 -429					40
30	-408 38 -460 14 -350 -415 -448 -460			-341 24 -380 11 -296 -340 -358 -378		30
20	-378 32 -439 12 -332 -380 -405 -436			-333 31 -360 3 -292 -350 -357 -360		20
10	-354 8 -360 5 -341 -360 -360 -360	-335 18 -360 4 -311 -335 -350 -359		-230 -230 2 -230 -230 -230 -230		10
0	-294 27 -330 5 -262 -260 -324 -329	-263 12 -280 3 -250 -260 -274 -279	-263 12 -280 8 -241 -265 -270 -279	-230 1	-342 23 -399 44 -309 -340 -360 -391	0
10 S		-268 15 -290 4 -251 -265 -280 -289	-240 21 -280 5 -221 -230 -254 -277		-312 26 -350 5 -272 -320 -331 -348	10 S
20 S		-270 1	-265 21 -300 6 -233 -265 -276 -297	-280 20 -310 9 -243 -280 -297 -308		20 S
30 S		-260 1		-270 -270 -270 -270		30 S
40 S			-278 16 -300 5 -252 -280 -287 -298	-275 5 -280 2 -270 -275 -278 -280		40 S
			-290 -290 -290 -290	-270 10 -280 2 -260 -270 -277 -280		
			-285 5 -290 4 -280 -285 -290 -290	-260 -260 -260 -260		
			-290 1		-290 14 -310 4 -271 -290 -300 -309	
				-297 17 -320 3 -280 -290 -310 -319	-300 1	
				-320 1	-295 5 -300 2 -290 -295 -298 -300	
				-360 1	-330 20 -350 2 -311 -330 -344 -349	
		-420 1	-423 33 -460 3 -382 -430 -450 -459	-387 29 -430 9 -350 -380 -422 -430		
			-419 26 -450 11 -358 -420 -440 -448	-426 27 -460 5 -391 -430 -454 -459		
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

MAY  
FL 290

MEAN LAT

[illegible]

APPENDIX C  
STATIC AIR TEMPERATURE CLIMATOLOGY

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

MAY

FL 310

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
60							60
50							50
40	-480 -480 -480 2 -480 -480 -480 -480			-410 1	-470 10 -480 2 -460 -470 -477 -480		40
30	-461 16 -480 10 -425 -465 -470 -478			-401 24 -440 16 -366 -395 -426 -440	-435 5 -440 2 -430 -435 -438 -440		30
20	-438 17 -479 15 -413 -440 -450 -474			-389 35 -440 8 -334 -390 -420 -437			20
10	-391 32 -430 14 -333 -400 -420 -430	-368 66 -430 8 -280 -405 -429 -430				-398 15 -420 4 -381 -395 -410 -419	10
0	-350 14 -360 3 -331 -360 -360 -360	-325 38 -370 6 -271 -335 -362 -369	-307 29 -359 6 -271 -305 -328 -356			-392 23 -440 51 -350 -390 -410 -440	0
10 S		-332 26 -380 13 -295 -330 -362 -380	-302 18 -320 10 -272 -305 -320 -320	-300 1		-372 21 -390 6 -333 -380 -390 -390	10 S
20 S		-330 18 -369 6 -320 -320 -338 -366	-316 11 -340 10 -302 -310 -326 -338	-334 22 -370 11 -302 -340 -354 -368		-350 8 -360 6 -341 -350 -352 -359	20 S
30 S		-320 14 -330 3 -301 -330 -330 -330	-332 7 -340 6 -321 -330 -340 -340			-343 8 -350 4 -331 -345 -350 -350	30 S
40 S			-330 5 -340 7 -321 -330 -330 -339			-330 3 -330 3 -330 -330 -330 -330	40 S
50 S			-330 1		-330 1	-320 1	50 S
60 S			-337 20 -350 6 -302 -350 -350 -350				60 S
70 S			-345 5 -350 2 -340 -345 -348 -350		-370 1	-340 6 -350 7 -330 -340 -350 -350	70 S
80 S			-347 9 -360 3 -340 -340 -354 -359	-340 1		-365 5 -370 2 -360 -365 -368 -370	80 S
90 S			-378 35 -420 4 -332 -380 -410 -419	-373 29 -420 8 -340 -365 -408 -419	-350 1		90 S
100 S			-423 12 -440 3 -410 -420 -434 -439	-418 30 -450 12 -357 -420 -450 -450	-440 1		100 S
110 S			-445 5 -450 2 -440 -445 -448 -450	-457 25 -480 14 -405 -465 -480 -487	-451 33 -528 10 -397 -450 -460 -517		110 S
120 S				-465 14 -490 10 -442 -465 -476 -488	-462 21 -490 9 -423 -460 -480 -488		120 S

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

MAY  
FL 310

LAT

TABULATED TEMPERATURES = °C \* 10

70 N

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 330

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APPENDIX C

STATIC AIR TEMPERATURE CLIMATOLOGY

MAY  
FL 330

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N				-570	1			-570	1	70 N
	-450	1						-450	1	
60	-460 -40 -500 2 -422 -460 -487 -498			-499 34 -540 7 -436 -510 -521 -538		-511 22 -550 9 -462 -510 -530 -547		-499 33 -549 19 -424 -500 -530 -546		60
	-540 34 -580 6 -492 -540 -580 -580		-530 50 -580 2 -482 -530 -564 -578	-491 61 -550 15 -373 -520 -540 -550		-522 42 -579 33 -426 -530 -560 -574	-544 8 -550 5 -531 -550 -550 -550	-520 48 -580 64 -390 -530 -560 -580		50
50	-519 25 -550 8 -483 -515 -549 -550	-490 29 -530 3 -461 -480 -514 -528	-495 39 -569 12 -421 -485 -525 -563	-508 40 -560 31 -406 -520 -540 -560		-531 22 -560 11 -492 -540 -550 -558	-546 10 -570 7 -540 -540 -551 -568	-514 37 -570 75 -410 -520 -550 -565		50
	-486 19 -510 8 -453 -490 -508 -510	-495 30 -540 23 -444 -500 -525 -540	-484 40 -586 64 -390 -480 -520 -565	-483 31 -510 6 -432 -500 -510 -510		-515 25 -540 2 -491 -515 -532 -539	-513 17 -540 10 -477 -510 -526 -538	-488 37 -582 132 -402 -490 -520 -544		40
40	-485 23 -539 40 -450 -480 -510 -532	-497 28 -559 18 -460 -490 -520 -557	-471 41 -559 7 -422 -460 -483 -550				-500 -500 -500 2 -500 -500 -500 -500	-480 31 -560 114 -413 -480 -510 -547		40
	-474 27 -530 69 -410 -480 -500 -526	-480 31 -540 26 -430 -480 -510 -540	-455 5 -460 2 -450 -455 -458 -460					-472 31 -540 118 -393 -480 -500 -530		30
30	-467 19 -518 38 -440 -470 -481 -505	-457 34 -510 16 -403 -465 -490 -507	-450 1 -450 1					-453 31 -517 103 -380 -460 -480 -500		30
	-453 15 -470 6 -431 -455 -470 -470	-431 37 -480 9 -372 -440 -467 -478	-450 1 -450 1					-430 34 -480 115 -353 -440 -460 -477		20
20		-395 26 -439 4 -380 -380 -411 -436	-403 4 -410 4 -400 -400 -405 -409					-398 29 -458 51 -360 -400 -430 -450		20
		-420 1	-391 15 -410 8 -371 -390 -409 -410	-400 1				-389 21 -420 47 -348 -390 -410 -420		10
10			-387 17 -420 7 -370 -380 -401 -418	-400 1				-385 12 -419 18 -370 -380 -393 -413		10
			-375 5 -380 2 -370 -375 -378 -380					-380 10 -390 11 -362 -380 -390 -390		0
0								-382 7 -390 6 -371 -380 -390 -390		0
								-381 12 -400 10 -360 -380 -390 -398		10
10								-380 15 -400 15 -346 -380 -390 -400		10
								-391 13 -429 24 -375 -390 -400 -421		20
20				-430 36 -480 4 -382 -430 -461 -478				-412 25 -478 27 -380 -410 -438 -464		20
								-445 38 -518 19 -374 -440 -480 -509		30
30								-488 38 -549 33 -406 -490 -529 -544		30
								-498 27 -549 16 -449 -500 -526 -544		40 S
40 S	150W	120W	90W	60W	30W	0	30E			40 S

LONGITUDE

MEAN	ST. DEV.	.3%	N
------	----------	-----	---

98%      50%      16%      2%

MAY

FL 350

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							
60					-490	1	-478 -43 -559 8 -430 -470 -524 -556
					-562 41 -620 9 -495 -560 -607 -618		-554 29 -580 11 -488 -560 -574 -580
50					-574 29 -610 7 -525 -570 -600 -609		-538 22 -570 4 -511 -535 -556 -568
	-550 15 -580 5 -540 -540 -561 -578			-480	1	-516 37 -579 13 -445 -520 -542 -575	-521 14 -540 9 -493 -520 -530 -538
40	-534 29 -588 14 -480 -540 -550 -580			-508 26 -550 16 -466 -500 -540 -547	-497 38 -540 6 -435 -495 -540 -540		
	-505 42 -550 12 -419 -525 -540 -548			-473 20 -500 8 -441 -475 -490 -499	-500 25 -530 12 -462 -505 -530 -530	-535 15 -550 2 -521 -535 -545 -549	
30	-467 26 -500 6 -431 -470 -492 -499	-433 47 -520 12 -390 -415 -502 -518		-432 20 -460 5 -410 -430 -454 -459	-489 18 -530 14 -470 -480 -509 -527	-500 23 -539 25 -460 -500 -520 -535	
	-440 14 -460 3 -430 -430 -450 -459	-416 17 -440 8 -391 -415 -438 -440	-410 16 -430 6 -382 -415 -422 -429	-420 20 -440 2 -401 -420 -434 -439	-489 21 -520 18 -453 -490 -513 -520	-491 23 -540 87 -450 -490 -520 -533	
20		-417 17 -440 7 -392 -410 -440 -440	-430 -430 -430 2 -430 -430 -430 -430	-435 25 -460 2 -411 -435 -452 -459	-474 13 -500 17 -450 -470 -484 -497	-445 5 -450 2 -440 -445 -448 -450	
		-415 5 -420 2 -410 -415 -418 -420	-427 9 -440 6 -411 -430 -432 -439	-453 23 -480 18 -413 -460 -470 -480	-480 10 -490 2 -470 -480 -487 -490	-438 7 -450 5 -430 -440 -444 -449	
10		-405 5 -410 2 -400 -405 -408 -410	-428 10 -440 5 -420 -420 -440 -440	-425 5 -430 2 -420 -425 -428 -430		-436 7 -450 7 -430 -430 -440 -449	
		-420 -420 2 -420 -420 -420 -420	-430 7 -440 4 -421 -430 -435 -439	-430 -430 2 -430 -430 -430 -430		-436 8 -450 10 -422 -440 -440 -448	
0		-410 14 -420 3 -391 -420 -420 -420	-433 4 -440 8 -430 -430 -439 -440	-415 5 -420 2 -410 -415 -418 -420		-435 5 -440 8 -430 -435 -440 -440	
			-424 14 -440 13 -400 -430 -440 -440	-420 -420 2 -420 -420 -420 -420	-440 10 -450 2 -430 -440 -447 -450	-439 9 -460 8 -430 -440 -440 -457	
10			-426 18 -440 12 -384 -430 -440 -440	-433 8 -440 4 -421 -435 -440 -440	-435 5 -440 4 -430 -435 -440 -440	-450 12 -460 9 -432 -460 -460 -460	
			-427 17 -440 7 -394 -430 -440 -440	-440 8 -450 6 -430 -440 -450 -450	-451 16 -470 7 -430 -450 -470 -470	-460	1
20			-427 5 -430 3 -420 -430 -430 -430	-478 38 -520 4 -431 -480 -515 -519	-456 24 -480 9 -420 -460 -480 -480	-480 30 -510 2 -451 -480 -500 -509	
			-480 -480 2 -480 -480 -480 -480	-460	1	-485 33 -530 8 -431 -490 -518 -529	-520 20 -540 2 -501 -520 -534 -539
30			-490	1		-523 34 -570 7 -465 -530 -551 -568	
				-551 20 -570 9 -513 -560 -570 -570	-539 21 -570 8 -510 -540 -559 -569		
40 S							
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY  
FL 350

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

70 N	-430	1			-615	15	-630	2	-570	10	-580	2	-460	1			-543	73	-630	6
					-601	-615	-625	-629	-560	-570	-577	-580					-433	-570	-606	-627
	-450	10	-460	2	-445	34	-499	4	-590				-470	1			-468	53	-588	8
	-440	-450	-457	-460	-411	-435	-471	-496									-413	-450	-496	-577
60	-502	63	-570	6	-571	51	-620	13	-580		1	-550	49	-600	9	-561	37	-600	15	
	-404	-520	-562	-569	-462	-580	-620	-620				-456	-560	-600	-600	-478	-570	-590	-600	
	-516	60	-580	9	-574	29	-620	11	-551	50	-600	10	-523	52	-629	43	-545	48	-618	52
	-405	-530	-567	-578	-532	-570	-604	-618	-441	-565	-591	-600	-408	-530	-560	-622	-440	-550	-590	-610
50	-536	40	-590	17	-534	29	-570	5	-553	20	-617	23	-519	39	-580	35	-500	50	-579	7
	-456	-550	-574	-587	-492	-530	-564	-569	-520	-550	-570	-598	-420	-520	-550	-580	-424	-520	-532	-574
	-529	37	-570	20	-539	34	-599	44	-521	35	-580	62	-465	51	-520	4	-530		1	
	-437	-540	-560	-570	-486	-535	-580	-591	-434	-520	-550	-578	-402	-470	-515	-519	-553	25	-599	18
																	-503	-555	-580	-593
40	-526	24	-576	67	-532	34	-590	55	-511	34	-570	13					-553	4	-560	4
	-480	-530	-550	-560	-460	-530	-560	-590	-465	-500	-560	-568					-550	-550	-555	-559
	-516	25	-560	107	-521	34	-588	20	-503	18	-520	4					-540		1	
	-470	-520	-540	-560	-448	-520	-559	-579	-481	-505	-520	-520								
30	-507	23	-550	96	-465	15	-480	2	-495	5	-500	2								
	-469	-510	-530	-550	-451	-465	-475	-479	-490	-495	-498	-500								
	-493	21	-539	26	-470	35	-530	5	-490		-490	2								
	-460	-490	-510	-535	-440	-450	-504	-527	-490	-490	-490	-490								
20	-466	16	-490	11	-440	14	-460	4	-460	-460	-460	3								
	-442	-470	-484	-490	-421	-440	-450	-459	-460	-460	-460	-460								
	-453	10	-470	7	-480				-453	17	-470	18	-445	5	-450	2				
	-440	-450	-460	-469					-417	-460	-470	-470	-440	-445	-448	-450				
10	-438	12	-450	5					-430			1	-447	5	-450	3				
	-421	-440	-450	-450									-440	-450	-450	-450				
	-433	5	-440	3					-480			1	-445	5	-450	2				
	-430	-430	-437	-440									-440	-445	-448	-450				
0	-420			1									-440	-440	-440	-440				
													-452	12	-470	5				
	-435	5	-440	2									-440	-450	-464	-469				
10	-430	-435	-438	-440									-458	12	-470	5				
	-440	10	-450	2									-441	-460	-470	-470				
	-430	-440	-447	-450									-469	10	-480	7				
													-451	-470	-480	-480				
20													-470			1				
30													-520			1				
40 S																				

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## LAT.

70 N							
60						-500 39 -560 4 -461 -490 -536 -557	
					-480 10 -490 2 -470 -480 -487 -490	-494 53 -618 19 -421 -490 -540 -609	
50					-562 50 -630 14 -463 -565 -618 -627	-500 55 -628 13 -425 -490 -552 -616	
					-553 45 -610 13 -449 -560 -591 -608	-549 57 -640 13 -455 -540 -612 -638	
40	-580 10 -590 2 -570 -580 -587 -590			-588 29 -620 4 -551 -590 -615 -619	-572 29 -629 22 -508 -580 -596 -622	-567 39 -600 6 -490 -580 -584 -598	
	-554 34 -590 8 -493 -560 -589 -590			-560 20 -600 21 -530 -550 -578 -600	-556 27 -600 18 -500 -555 -583 -600		
30	-501 25 -540 7 -480 -480 -530 -539	-500 1		-518 32 -569 19 -450 -520 -550 -566	-562 28 -600 13 -510 -570 -582 -600	-568 27 -610 4 -541 -560 -591 -608	
	-515 5 -520 2 -510 -515 -518 -520	-480 17 -510 8 -460 -480 -498 -509		-485 27 -530 11 -436 -480 -508 -528	-513 17 -530 3 -491 -520 -527 -530	-542 19 -588 37 -500 -550 -560 -576	
20		-469 20 -509 7 -442 -460 -481 -506	-464 11 -490 8 -451 -460 -469 -487	-479 17 -500 7 -451 -480 -500 -500	-500 1	-525 22 -570 74 -485 -525 -540 -570	
		-477 5 -480 3 -470 -480 -480 -480	-460 6 -470 12 -450 -460 -462 -470	-501 20 -520 7 -471 -510 -520 -520	-510 24 -560 22 -474 -510 -533 -560	-529 15 -550 11 -510 -530 -544 -550	
10			-468 7 -480 6 -460 -470 -472 -479	-470 8 -480 6 -460 -470 -480 -480		-504 5 -510 5 -500 -500 -510 -510	
			-475 5 -480 6 -470 -475 -480 -480			-500 12 -520 12 -480 -500 -510 -518	
0			-480 -480 -480 2 -480 -480 -480 -480			-496 8 -510 17 -483 -500 -500 -510	
						-495 10 -510 12 -480 -490 -510 -510	
10						-495 13 -520 15 -473 -490 -510 -517	
						-502 11 -520 14 -483 -500 -510 -520	
20					-510 1	-515 13 -540 13 -500 -510 -530 -538	
					-530 1	-528 16 -540 5 -502 -540 -540 -540	
30				-580 -580 -580 2 -580 -580 -580 -580	-540 1	-540 -540 -540 2 -540 -540 -540 -540	
		-580 1	-558 41 -590 6 -485 -580 -590 -590	-538 32 -590 5 -501 -540 -564 -587			
40 S			-551 34 -590 8 -493 -555 -589 -590	-615 5 -620 2 -610 -615 -618 -620			
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY  
FL 370

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-480 8 -490 3 -470 -480 -487 -490		-560 1	-525 65 -590 2 -463 -525 -569 -587	-480 1		-504 46 -589 7 -461 -480 -561 -586	70 N
	-523 73 -650 17 -430 -490 -613 -647	-532 48 -590 5 -455 -550 -571 -588	-470 1	-530 60 -590 2 -472 -530 -571 -588	-473 29 -510 4 -441 -470 -500 -509		-514 63 -649 33 -430 -490 -590 -644	
60	-552 69 -659 13 -432 -570 -621 -653	-573 51 -630 8 -471 -585 -618 -629	-557 29 -590 3 -522 -560 -580 -589	-516 61 -590 7 -441 -500 -580 -589	-568 45 -610 10 -469 -585 -600 -608		-533 64 -655 62 -432 -540 -592 -630	60
	-522 49 -609 5 -481 -490 -565 -604	-554 42 -600 5 -485 -570 -587 -598	-465 43 -520 4 -404 -470 -496 -517	-503 61 -617 32 -406 -490 -570 -601	-555 53 -629 44 -446 -570 -600 -621	-530 44 -599 4 -482 -520 -566 -596	-531 61 -630 121 -414 -540 -600 -626	50
50	-558 55 -630 13 -475 -570 -620 -628	-560 69 -630 8 -430 -590 -626 -630	-535 51 -618 14 -443 -550 -570 -610	-541 55 -600 27 -426 -560 -590 -600	-572 38 -629 9 -505 -570 -600 -625	-588 21 -610 6 -560 -595 -610 -610	-552 54 -637 103 -430 -560 -600 -630	50
	-561 38 -610 14 -488 -570 -599 -610	-557 41 -637 98 -459 -560 -600 -621	-550 37 -610 58 -460 -560 -580 -609	-543 66 -600 3 -455 -580 -594 -599		-586 27 -630 12 -552 -585 -615 -630	-560 39 -633 219 -460 -560 -600 -626	40
40	-563 28 -628 66 -493 -560 -590 -614	-567 38 -635 90 -470 -570 -610 -620	-558 26 -600 11 -520 -550 -588 -600				-563 32 -634 214 -483 -560 -590 -620	40
	-556 24 -606 131 -516 -560 -580 -600	-553 29 -600 16 -485 -555 -570 -597	-570 14 -590 3 -560 -560 -580 -589				-550 30 -610 194 -479 -550 -580 -600	30
30	-548 20 -597 98 -510 -550 -570 -590	-530 21 -570 6 -510 -525 -546 -567					-537 29 -595 165 -463 -540 -560 -590	30
	-536 22 -588 27 -505 -540 -558 -580	-521 19 -550 13 -492 -520 -540 -548	-530 1				-518 30 -582 138 -457 -520 -540 -570	20
20	-511 8 -530 7 -501 -510 -511 -528	-517 20 -550 20 -484 -520 -540 -550	-530 1				-505 28 -560 83 -456 -510 -530 -554	20
	-504 9 -520 11 -490 -500 -510 -518	-502 12 -510 5 -482 -510 -510 -510	-503 11 -520 16 -483 -510 -510 -517				-495 17 -520 49 -460 -500 -510 -520	10
10	-500 11 -510 7 -481 -500 -510 -510		-499 10 -510 7 -490 -490 -510 -510	-500 1			-495 14 -519 33 -470 -500 -510 -514	10
	-490 7 -500 4 -481 -490 -495 -499		-495 12 -510 11 -480 -490 -510 -510	-513 8 -520 4 -501 -515 -520 -520			-496 11 -520 38 -480 -495 -510 -520	0
0	-486 7 -500 7 -480 -480 -490 -499		-497 12 -520 7 -490 -490 -510 -519	-507 9 -520 7 -491 -510 -510 -519			-496 12 -520 33 -480 -490 -510 -520	0
	-497 5 -500 3 -490 -500 -500 -500		-485 5 -490 2 -480 -485 -488 -490	-504 17 -539 14 -475 -500 -520 -535			-499 15 -538 34 -470 -500 -510 -527	10
10	-510 1			-513 15 -540 12 -490 -515 -522 -538			-507 14 -539 27 -485 -510 -520 -535	10
				-521 13 -550 15 -510 -520 -528 -550			-518 13 -550 29 -500 -520 -530 -550	20
20				-530 12 -550 7 -511 -530 -540 -549			-529 13 -550 13 -502 -530 -540 -548	20
				-560 1			-557 18 -580 6 -540 -550 -580 -580	30
30				-585 15 -600 2 -571 -585 -595 -599			-556 37 -600 14 -485 -575 -590 -597	30
							-564 40 -620 10 -494 -570 -601 -618	40 S
40 S								
	150W	120W	90W	60W	30W	0	30E	

LONGITUDE

LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY  
FL 390

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-473 12 -490 3 -460 -470 -484 -489	-510 1	-495 15 -510 2 -481 -495 -505 -509	-543 45 -590 4 -482 -550 -585 -589			-509 42 -590 10 -462 -500 -554 -588	70 N
60	-511 45 -570 12 -452 -490 -570 -570	-495 21 -520 4 -471 -495 -515 -519	-520 1	-580 1	-560 1		-512 38 -579 34 -457 -510 -570 -573	60
50	-555 75 -660 11 -466 -520 -648 -660	-529 42 -609 12 -472 -515 -572 -603	-520 1	-505 57 -609 8 -440 -500 -564 -604	-534 41 -609 8 -483 -525 -573 -606		-517 58 -660 67 -423 -510 -580 -654	50
40	-470 1	-542 34 -590 5 -501 -540 -577 -588	-474 12 -490 5 -460 -480 -484 -489	-494 47 -617 14 -433 -480 -538 -599	-538 50 -649 13 -472 -520 -573 -640		-540 62 -668 67 -443 -520 -620 -657	40
30	-558 60 -630 11 -462 -590 -620 -628	-579 65 -640 10 -464 -610 -630 -638	-583 52 -640 18 -477 -595 -630 -640	-555 59 -630 13 -434 -560 -612 -630	-525 15 -540 2 -511 -525 -535 -539	-563 23 -600 4 -541 -555 -581 -598	-572 57 -670 98 -460 -580 -630 -670	30
20	-596 51 -669 18 -483 -600 -643 -663	-577 51 -658 62 -462 -580 -630 -650	-582 62 -660 45 -438 -610 -630 -660	-460 40 -500 2 -422 -460 -487 -498	-525 25 -550 2 -501 -525 -542 -549	-602 28 -630 5 -554 -610 -624 -629	-586 56 -674 188 -450 -600 -640 -663	20
10	-584 39 -640 15 -523 -580 -620 -640	-580 46 -658 69 -470 -580 -630 -650	-615 22 -659 8 -591 -605 -630 -656				-588 42 -660 121 -470 -590 -630 -650	10
0	-585 30 -639 47 -525 -580 -610 -631	-594 30 -639 27 -520 -600 -620 -635	-605 5 -610 2 -600 -605 -608 -610				-588 29 -640 96 -510 -590 -610 -631	0
10 S	-593 20 -630 41 -550 -590 -620 -630	-584 44 -630 10 -520 -605 -626 -630	-600 10 -610 2 -590 -600 -607 -610				-588 28 -630 65 -520 -590 -620 -630	10 S
20 S	-581 20 -610 14 -553 -585 -600 -610	-586 28 -620 8 -540 -595 -609 -619	-580 7 -590 4 -571 -580 -585 -589				-576 23 -618 54 -531 -580 -600 -610	20 S
30 S	-560 14 -580 3 -550 -550 -570 -579	-571 12 -590 8 -551 -570 -580 -589	-563 4 -570 4 -560 -560 -563 -569				-555 19 -589 41 -518 -560 -570 -582	30 S
40 S	-555 5 -580 2 -550 -555 -558 -560		-560 -560 -560 2 -560 -560 -560 -560				-559 17 -589 15 -528 -560 -570 -584	40 S
50 S	-550 -550 -550 -550		-564 11 -580 10 -550 -565 -576 -580				-558 10 -580 22 -544 -560 -570 -580	50 S
60 S	-550 1		-562 13 -580 6 -541 -565 -572 -579	-570 7 -580 4 -561 -570 -575 -579			-559 12 -580 20 -540 -560 -570 -580	60 S
70 S	-530 1		-550 1	-566 8 -580 9 -552 -570 -570 -578			-555 13 -579 25 -530 -550 -570 -575	70 S
80 S	-540 -540 -540 -540			-564 10 -580 7 -550 -570 -570 -579			-555 12 -580 23 -540 -550 -570 -580	80 S
90 S	-550 -550 -550 -550			-566 5 -570 5 -560 -570 -570 -570			-561 8 -570 23 -550 -560 -570 -570	90 S
100 S	-550 1			-570 7 -580 4 -561 -570 -575 -579			-568 11 -589 21 -550 -570 -580 -586	100 S
110 S				-600 1			-581 22 -610 13 -550 -580 -610 -610	110 S
120 S							-577 28 -620 16 -533 -580 -608 -620	120 S
130 S							-570 42 -640 21 -492 -570 -610 -640	130 S
140 S							-583 48 -649 20 -491 -590 -640 -646	140 S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY

FL 410

LAT.

70 N						70 N
60						60
					-510 46 -560 4 -444 -520 -550 -559	
50					-567 70 -670 13 -462 -550 -633 -670	-610 50 -660 2 -562 -610 -644 -658
					-565 61 -679 22 -474 -580 -629 -672	-569 53 -697 12 -489 -560 -612 -682
40	-600 1			-598 51 -690 13 -507 -600 -634 -688	-588 71 -710 12 -510 -585 -685 -708	-598 66 -660 8 -487 -630 -659 -660
	-600 14 -620 3 -590 -590 -610 -619			-619 56 -689 14 -498 -625 -670 -685	-560 1	-570 1
30	-597 41 -650 3 -552 -590 -631 -648			-623 18 -650 6 -601 -620 -642 -649		
	-570 1			-614 15 -640 5 -600 -610 -627 -638		
20			-574 14 -590 5 -552 -580 -584 -589	-590 -590 -590 2 -590 -590 -590 -590		-624 24 -669 7 -585 -620 -632 -665
			-575 5 -580 4 -570 -575 -580 -580			-610 16 -630 3 -591 -610 -624 -629
10			-588 8 -600 4 -580 -585 -595 -599			-608 4 -610 4 -601 -610 -610 -610
			-595 5 -600 4 -590 -595 -600 -600			-610 6 -620 6 -601 -610 -612 -619
0						-603 8 -620 8 -591 -600 -609 -619
						-598 8 -610 9 -582 -600 -600 -608
10						-599 3 -600 7 -591 -600 -600 -600
						-604 9 -620 7 -591 -600 -610 -619
20						-610 16 -640 12 -582 -610 -622 -638
						-635 5 -640 2 -630 -635 -638 -640
30						-650 -650 -650 2 -650 -650 -650 -650
					-599 48 -669 7 -540 -620 -641 -666	
40 S					-611 39 -660 12 -552 -610 -652 -660	
	30E	60E	90E	120E	150E	180W 150W

LONGITUDE

98%      50%      16%      2%

MAY  
FL 410

	MEAN	LAT
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00
9	0.00	0.00
10	0.00	0.00
11	0.00	0.00
12	0.00	0.00
13	0.00	0.00
14	0.00	0.00
15	0.00	0.00
16	0.00	0.00
17	0.00	0.00
18	0.00	0.00
19	0.00	0.00
20	0.00	0.00
21	0.00	0.00
22	0.00	0.00
23	0.00	0.00
24	0.00	0.00
25	0.00	0.00
26	0.00	0.00
27	0.00	0.00
28	0.00	0.00
29	0.00	0.00
30	0.00	0.00
31	0.00	0.00
32	0.00	0.00
33	0.00	0.00
34	0.00	0.00
35	0.00	0.00
36	0.00	0.00
37	0.00	0.00
38	0.00	0.00
39	0.00	0.00
40	0.00	0.00
41	0.00	0.00
42	0.00	0.00
43	0.00	0.00
44	0.00	0.00
45	0.00	0.00
46	0.00	0.00
47	0.00	0.00
48	0.00	0.00
49	0.00	0.00
50	0.00	0.00
51	0.00	0.00
52	0.00	0.00
53	0.00	0.00
54	0.00	0.00
55	0.00	0.00
56	0.00	0.00
57	0.00	0.00
58	0.00	0.00
59	0.00	0.00
60	0.00	0.00
61	0.00	0.00
62	0.00	0.00
63	0.00	0.00
64	0.00	0.00
65	0.00	0.00
66	0.00	0.00
67	0.00	0.00
68	0.00	0.00
69	0.00	0.00
70	0.00	0.00
71	0.00	0.00
72	0.00	0.00
73	0.00	0.00
74	0.00	0.00
75	0.00	0.00
76	0.00	0.00
77	0.00	0.00
78	0.00	0.00
79	0.00	0.00
80	0.00	0.00
81	0.00	0.00
82	0.00	0.00
83	0.00	0.00
84	0.00	0.00
85	0.00	0.00
86	0.00	0.00
87	0.00	0.00
88	0.00	0.00
89	0.00	0.00
90	0.00	0.00
91	0.00	0.00
92	0.00	0.00
93	0.00	0.00
94	0.00	0.00
95	0.00	0.00
96	0.00	0.00
97	0.00	0.00
98	0.00	0.00
99	0.00	0.00
100	0.00	0.00

[illegible]

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

MAY

FL 430

LAT.

70 N

70 N							70 N
60							60
50							50
40							40
30							30
20							20
10							10
0							0
10							10
20							20
30							30
40 S							40 S

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

MAY  
FL 430

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

70 N								70 N			
60				- 440	1			- 440	1	60	
50		- 510	1	- 480	1	- 485 15 - 500 2 - 471 - 485 - 495 - 499			- 490 16 - 510 4 - 471 - 490 - 505 - 509		50
	- 570	1	- 510	1	- 505 15 - 520 2 - 491 - 505 - 515 - 519				- 552 48 - 610 6 - 492 - 545 - 610 - 610		
40	- 593 12 - 610 3 - 580 - 590 - 604 - 609	- 553 49 - 620 6 - 485 - 540 - 612 - 619	- 553 68 - 649 3 - 500 - 510 - 605 - 644						- 578 61 - 720 24 - 485 - 580 - 613 - 720		40
	- 595 27 - 620 4 - 553 - 605 - 615 - 619	- 587 32 - 639 7 - 534 - 590 - 611 - 636	- 675 45 - 710 8 - 581 - 700 - 709 - 710						- 823 57 - 719 26 - 530 - 610 - 700 - 715		
30	- 700 - 700 - 700 2 - 700 - 700 - 700 - 700	- 670 28 - 690 3 - 632 - 690 - 690 - 690	- 630	1					- 673 31 - 700 6 - 630 - 690 - 700 - 700		30
	- 680	1							- 644 39 - 680 5 - 578 - 660 - 674 - 679		
20									- 642 10 - 660 5 - 631 - 640 - 647 - 658		20
									- 648 16 - 670 6 - 630 - 650 - 662 - 669		
10									- 645 5 - 650 4 - 640 - 645 - 650 - 650		10
									- 655 5 - 660 4 - 650 - 655 - 660 - 660		
0									- 655 5 - 660 2 - 650 - 655 - 658 - 660		0
									- 650	1	
10									- 655 5 - 660 2 - 650 - 655 - 658 - 660		10
									- 653 5 - 660 3 - 650 - 650 - 657 - 660		
20									- 659 9 - 670 10 - 650 - 655 - 670 - 670		20
30									- 563 9 - 570 3 - 551 - 570 - 570 - 570		30
									- 570 8 - 580 3 - 560 - 570 - 577 - 580		
40 S											40 S
	150W	120W	90W	60W	30W	0	30E				
	LONGITUDE										

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 270

LAT.

70 N						70 N
60						60
50						50
40						40
	-244 41 -309 7 -191 -260 -272 -305			-252 37 -329 21 -200 -250 -298 -322		
	-285 5 -290 2 -280 -285 -288 -290			-270 50 -320 2 -222 -270 -304 -318		
30		-213 45 -270 3 -162 -210 -251 -268		-210 10 -220 2 -200 -210 -217 -220		
20	-160 1	-210 -210 -210 2 -210 -210 -210 -210	-202 13 -220 6 -181 -205 -212 -219	-210 1		-270 21 -319 43 -237 -270 -290 -312
		-225 5 -230 2 -220 -225 -228 -230	-227 39 -280 3 -191 -210 -258 -277			-265 9 -270 4 -251 -270 -270 -270
		-230 1	-223 12 -240 3 -210 -220 -234 -239	-233 15 -250 4 -211 -235 -245 -249		
10						
			-230 1			
0			-240 1			
10						
					-226 14 -250 5 -211 -220 -237 -248	
20	-240 1					
30			-350 40 -390 2 -312 -350 -377 -388	-420 20 -440 2 -401 -420 -434 -439	-403 46 -480 9 -335 -390 -454 -477	
				-437 29 -470 3 -402 -440 -460 -469	-430 1	
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

JUNE  
FL 270

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 290

LAT.

70 N						70 N
60						60
50						50
40	-380 1				-340 1	40
30	-280 50 -350 5 -212 -290 -324 -347			-310 37 -407 15 -248 -310 -328 -393	-340 1	30
20	-290 57 -379 4 -240 -270 -342 -375			-260 -260 -260 2 -260 -260 -260 -260		20
10	-265 45 -310 2 -222 -265 -296 -308	-280 31 -310 4 -241 -295 -310 -310		-265 15 -280 2 -251 -265 -275 -279		10
0	-225 5 -230 2 -220 -225 -228 -230	-220 8 -230 6 -210 -220 -230 -230	-260 19 -280 7 -224 -270 -270 -279	-280 1	-328 22 -378 55 -291 -330 -350 -389	0
10		-237 12 -250 3 -221 -240 -247 -250	-270 1	-280 1	-311 17 -330 7 -282 -320 -330 -330	10
20		-280 1		-288 19 -310 5 -261 -300 -304 -309		20
30		-290 -290 -290 2 -290 -290 -290 -290				30
40 S		-295 5 -300 2 -290 -295 -298 -300				40 S
		-280 20 -300 2 -261 -280 -294 -299	-270 8 -280 3 -260 -270 -277 -280			
		-280 1				
				-280 1	-265 15 -280 2 -251 -265 -275 -279	
	-280 1		-290 1		-290 14 -310 3 -280 -280 -300 -309	-280 10 -290 2 -270 -280 -287 -290
		-295 5 -300 2 -290 -295 -298 -300				
		-315 15 -330 2 -301 -315 -325 -329			-415 15 -430 2 -401 -415 -425 -429	
		-375 5 -380 2 -370 -375 -378 -380	-392 12 -410 5 -380 -390 -404 -409	-438 32 -490 11 -384 -440 -468 -488		
			-479 32 -539 9 -425 -480 -497 -534	-420 20 -440 2 -401 -420 -434 -439		
30E	60E	90E	120E	150E	180W	150W

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 290

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 310

LAT.

70 N						70 N
60						60
50						50
40	-397 50 -450 3 -333 -410 -437 -448			-410 1		40
30	-371 66 -450 10 -280 -390 -440 -448		-354 39 -429 19 -304 -350 -402 -426			30
20	-332 44 -400 6 -281 -320 -384 -398		-323 15 -340 6 -301 -325 -340 -340	-325 11 -340 4 -311 -325 -335 -339	-450 1	20
10	-280 12 -300 4 -270 -275 -290 -299	-312 35 -370 11 -252 -310 -340 -370	-350 1	-370 -370 -370 -370 2	-404 24 -450 7 -380 -400 -431 -448	10
0	-270 1	-307 19 -320 3 -282 -320 -320 -320	-308 15 -320 5 -282 -310 -320 -320	-290 1	-400 1	0
10		-285 5 -290 2 -280 -285 -288 -290	-313 5 -320 3 -310 -310 -317 -320		-353 16 -380 4 -340 -345 -366 -378	10
20		-315 5 -320 2 -310 -315 -318 -320	-331 10 -340 9 -312 -330 -340 -340	-357 5 -360 3 -350 -360 -360 -360	-336 10 -350 5 -321 -340 -344 -349	20
30		-335 5 -340 2 -330 -335 -338 -340	-327 11 -340 6 -311 -325 -340 -340		-320 8 -330 3 -310 -320 -327 -330	30
40 S		-335 5 -340 2 -330 -335 -338 -340			-320 1	40 S
30		-345 5 -350 2 -340 -345 -348 -350	-330 1	-330 1	-330 1	30
20			-340 1	-340 1		20
10				-335 15 -350 2 -321 -335 -345 -349	-340 14 -360 4 -321 -340 -350 -359	10
0			-320 1	-320 8 -330 3 -310 -320 -327 -330	-320 10 -330 2 -310 -320 -327 -330	0
10	-320 1		-400 1			10
20			-450 1	-380 60 -440 2 -322 -380 -421 -438	-420 1	20
30		-445 35 -480 2 -411 -445 -469 -479	-466 29 -510 8 -414 -470 -489 -507	-488 39 -549 15 -402 -490 -520 -544		30
40 S			-501 29 -540 8 -454 -500 -538 -540	-504 29 -550 5 -471 -500 -531 -548		40 S

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 310

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

	-530	1	-510 20 -530 2 -491 -510 -524 -529	-473 9 -480 3 -461 -480 -480 -480			-495 26 -530 6 -462 -485 -530 -530
-503 33 -550 4 -462 -500 -531 -548				-457 26 -480 3 -422 -470 -477 -480	-424 23 -460 7 -391 -420 -450 -459		-454 43 -548 14 -393 -455 -489 -540
				-460 20 -480 2 -441 -460 -474 -479	-453 23 -490 7 -421 -450 -480 -489		-454 23 -490 9 -422 -450 -480 -488
	-440	1	-445 17 -460 4 -421 -450 -460 -460	-439 29 -509 8 -411 -430 -449 -502	-469 31 -529 32 -406 -475 -500 -524	-468 13 -480 4 -451 -470 -480 -480	-462 31 -529 49 -410 -460 -493 -520
-440 34 -489 11 -384 -440 -470 -486	-490 16 -510 3 -471 -490 -504 -509	-390	1	-460 51 -530 6 -411 -435 -530 -530	-482 32 -510 5 -425 -500 -504 -509	-466 16 -480 9 -433 -470 -480 -480	-459 38 -530 35 -387 -470 -496 -530
-447 22 -470 7 -411 -450 -470 -470	-417 33 -480 35 -367 -410 -460 -480	-413 40 -489 46 -339 -410 -460 -481	-460 20 -480 2 -441 -460 -474 -479			-438 32 -480 9 -376 -450 -467 -478	-419 38 -487 103 -340 -420 -460 -480
-409 27 -477 50 -370 -410 -440 -460	-406 28 -449 23 -360 -400 -440 -446	-407 18 -440 7 -390 -400 -421 -438				-445 15 -460 2 -431 -445 -455 -459	-396 41 -473 111 -302 -400 -440 -460
-397 27 -459 33 -349 -400 -420 -454	-401 25 -459 25 -370 -400 -430 -450						-384 40 -460 75 -295 -390 -420 -455
-399 32 -460 9 -360 -390 -432 -457							-355 56 -459 34 -257 -370 -400 -453
-373 17 -390 3 -351 -380 -387 -390							-366 31 -418 77 -280 -370 -390 -410
	-340	1					-326 28 -379 10 -282 -330 -346 -375
							-335 14 -360 19 -310 -340 -350 -360
							-326 11 -340 11 -310 -330 -340 -340
							-330 8 -340 3 -320 -330 -337 -340
							-336 8 -350 5 -330 -330 -344 -349
							-340 -340 -340 2 -340 -340 -340 -340
							-338 15 -360 6 -320 -340 -352 -359
							-320 8 -330 6 -310 -320 -330 -330
							-360 40 -400 2 -322 -360 -387 -398
							-408 52 -450 4 -326 -430 -445 -449
							-478 38 -549 25 -394 -480 -512 -540
							-502 29 -550 13 -455 -500 -540 -548

150W

120W

90W

60W

30W

0

30E

LONGITUDE

LAT

70 N

60

50

40

30

20

10

0

10

20

30

40S

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 330

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

70 N		-490	1	-420	1	410 -410 -2 410 -410 -410			-433 33 -488 4 -410 -415 -456 -486	70 N	
	-520 29 -550 3 -482 -530 -544 -549			-425 25 -450 2 -401 -425 -442 -449		423 40 -480 4 372 -420 -456 -477			-456 57 -550 9 -375 -450 -516 -547		
60	-400	1	-505 25 -530 2 -481 -505 -522 -529	-475 5 -480 2 -470 -475 -478 -480		527 26 -550 3 -492 -540 -547 -550	500 46 -550 6 -418 -505 -542 -549		-489 43 -550 23 -404 -490 -535 -550	60	
			-535 15 -550 2 -521 -535 -545 -549	-460	1	504 23 -540 10 -464 -510 -526 -538	498 39 -550 37 -397 -510 -530 -550	-450	1	-499 36 -550 54 -401 -510 -530 -550	
50	-499 20 -540 9 -472 -500 -514 -537		-490 18 -520 6 -470 -490 -504 -518	-488 27 -520 8 -441 -500 -509 -519		471 35 -530 21 -414 -460 -508 -530		-480	1	-482 30 -538 55 -420 -480 -510 -530	50
	-490 17 -529 8 -470 -490 -490 -524		-458 28 -519 21 -414 -460 -488 -512	-462 39 -529 48 -380 -470 -500 -521		450 17 -460 4 -422 -460 -460 -460	475 5 -480 2 -470 -475 -478 -480	-463 39 -510 8 -388 -465 -499 -509		-458 38 -530 103 -380 -460 -500 -520	40
40	-457 26 -519 46 -409 -455 -480 -511		-450 28 -508 28 -400 -450 -484 -499	-438 38 -509 8 -370 -440 -449 -502				-495 5 -500 4 -490 -495 -500 -500		-438 41 -518 125 -350 -440 -480 -510	
	-450 25 -508 63 -402 -450 -480 -498		-441 24 -479 18 -400 -440 -460 -477					-470	1	-440 38 -507 95 -330 -440 -470 -491	30
30	-455 23 -499 35 -417 -450 -480 -493		-423 29 -460 4 -391 -420 -450 -459							-429 44 -498 74 -330 -440 -473 -490	
	-446 20 -480 7 -421 -440 -461 -476		-405 15 -420 2 -391 -405 -415 -419							-420 34 -480 99 -330 -430 -450 -480	20
20		-400	1							-386 26 -410 18 -327 -400 -403 -410	
		-370	1							-380 17 -410 16 -353 -380 -400 -407	10
10										-382 7 -390 6 -371 -380 -390 -390	
										-380 11 -390 7 -361 -380 -390 -390	0
0										-380 8 -390 10 -370 -380 -390 -390	
										-380 12 -410 13 -362 -380 -382 -408	10
10						-420	1			-384 14 -419 21 -364 -380 -398 -416	
						-420	1			-386 15 -419 16 -356 -385 -400 -414	20
20						-440	1			-415 16 -450 14 -393 -415 -429 -447	
						-470	1			-440 34 -509 23 -379 -440 -475 -506	30
30						-480	1			-507 41 -569 26 -435 -510 -550 -565	
										-540 31 -580 23 -484 -550 -570 -580	40 S
40 S	150W	120W	90W	60W	30W	0	30E				

LONGITUDE

CODE :	MEAN	ST. DEV.	.3%	N
	98%	50%	16%	2%

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 350

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

250

70 N

60

50

40

30

20

10

0

10

20

30

40 S

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 350

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

60

50

40

30

20

10

0

10

20

30

40 S

-580 1		-440 1	-433 12 -450 3 -420 -430 -444 -449	-403 29 -440 3 -371 -400 -427 -438		-441 58 -577 8 -374 -435 -449 -562
-519 43 -589 11 -462 -510 -564 -586	-508 54 -580 10 -425 -530 -561 -578	-460 1		-480 71 -560 6 -374 -435 -552 -559		-500 59 -589 28 -392 -505 -560 -585
-513 52 -560 8 -417 -530 -560 -560	-524 58 -580 10 -421 -545 -580 -580	-496 64 -580 5 -412 -500 -561 -578		-554 24 -580 8 -511 -560 -579 -580		-519 52 -580 38 -410 -525 -571 -580
-515 50 -579 20 -400 -520 -570 -576	-540 47 -580 4 -465 -560 -575 -579	-521 36 -590 12 -467 -510 -557 -588	-520 21 -559 23 -480 -520 -540 -556	-532 36 -598 57 -435 -540 -560 -589	-530 50 -560 5 -440 -550 -560 -560	-522 42 -596 146 -400 -530 -560 -590
-512 33 -559 21 -430 -520 -540 -556	-535 21 -560 4 -511 -535 -555 -559	-520 34 -569 26 -465 -525 -560 -565	-517 38 -579 26 -425 -520 -540 -575	-490 50 -530 3 -424 -520 -527 -530	-544 29 -580 9 -502 -550 -574 -580	-521 37 -587 115 -420 -520 -558 -580
-521 24 -559 35 -477 -520 -548 -553	-506 29 -568 61 -452 -510 -530 -560	-513 37 -578 63 -442 -510 -550 -570		-470 29 -519 4 -450 -455 -491 -516	-511 40 -580 12 -454 -500 -550 -580	-508 35 -580 201 -450 -510 -540 -570
-512 28 -557 92 -460 -515 -540 -550	-500 24 -550 61 -460 -500 -530 -548	-485 22 -520 24 -440 -485 -510 -520			-533 39 -570 6 -458 -545 -562 -569	-497 34 -563 220 -408 -500 -530 -550
-506 28 -556 135 -460 -510 -530 -550	-474 19 -510 9 -450 -480 -490 -507				-530 1	-496 33 -555 180 -420 -500 -530 -550
-498 28 -554 103 -440 -500 -520 -540						-485 40 -550 167 -373 -490 -520 -537
-480 25 -530 36 -444 -480 -510 -530	-460 1					-468 38 -530 155 -371 -480 -504 -529
-464 11 -489 11 -450 -460 -470 -486						-434 33 -488 40 -380 -450 -470 -474
-456 9 -470 7 -441 -460 -460 -469	-450 1					-439 19 -470 32 -396 -440 -460 -470
-450 -450 -450 -450						-438 13 -460 16 -420 -440 -450 -457
		-460 1				-434 12 -460 16 -420 -430 -446 -457
		-460 1	-460 1			-430 17 -460 21 -402 -430 -448 -460
			-460 1			-435 14 -460 21 -410 -430 -450 -460
			-470 1			-441 18 -470 29 -406 -440 -460 -470
						-438 20 -470 30 -400 -440 -460 -470
						-450 21 -507 37 -410 -450 -470 -488
						-473 41 -560 29 -418 -460 -520 -560
						-529 50 -590 21 -460 -540 -580 -590
						-562 42 -610 21 -480 -570 -600 -610

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE :

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 370

LAT.

70 N

[illegible]

LONGITUDE





MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 390

LAT.

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 390

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-485 40 -520 6 -408 -500 -512 -519	-456 41 -539 13 -392 -460 -492 -535	-476 45 -604 31 -402 -480 -510 -568	-462 32 -538 28 -405 -460 -497 -529	-481 44 -559 9 -422 -470 -527 -555		-470 41 -596 91 -398 -460 -510 -544	70 N
60	-486 26 -530 5 -461 -470 -511 -528	-469 36 -560 29 -406 -460 -500 -560	-475 35 -539 21 -414 -480 -508 -536	-498 55 -590 9 -415 -490 -560 -588	-528 61 -648 18 -420 -545 -580 -636		-485 51 -638 98 -400 -480 -540 -591	60
50	-512 42 -609 19 -450 -510 -534 -606	-502 50 -628 37 -429 -490 -550 -616	-466 40 -520 12 -400 -470 -510 -518	-530 83 -620 3 -425 -550 -598 -617	-583 65 -640 16 -456 -580 -630 -637		-513 64 -647 111 -400 -500 -600 -640	50
40	-523 74 -648 4 -480 -480 -568 -640	-531 54 -630 21 -448 -520 -594 -630	-526 29 -579 7 -491 -520 -551 -576	-480 1 -480	-516 41 -609 15 -463 -510 -550 -602	-590 10 -600 2 -580 -590 -597 -600	-535 60 -658 73 -434 -530 -610 -650	40
30	-572 49 -630 18 -490 -585 -623 -630	-559 48 -629 21 -480 -560 -618 -626	-582 27 -620 5 -542 -580 -607 -618	-608 17 -630 6 -582 -610 -622 -629	-615 5 -620 2 -610 -615 -618 -620	-580 20 -600 2 -561 -580 -594 -599	-573 52 -648 79 -460 -590 -620 -634	30
20	-585 39 -649 15 -510 -590 -618 -644	-580 28 -630 77 -510 -580 -610 -625	-566 38 -620 34 -457 -570 -610 -620		-603 18 -620 4 -581 -605 -620 -620		-584 37 -655 179 -501 -590 -620 -650	20
10	-581 19 -610 22 -544 -580 -600 -610	-575 28 -630 125 -490 -570 -610 -620	-575 15 -600 13 -545 -570 -591 -600				-574 27 -634 205 -500 -570 -600 -620	10
0	-565 25 -600 52 -510 -570 -590 -600	-567 18 -599 29 -536 -570 -580 -594	-573 5 -580 3 -570 -570 -577 -580				-563 24 -600 102 -490 -570 -580 -600	0
10 S	-569 18 -600 38 -537 -570 -590 -600	-555 11 -570 4 -541 -555 -565 -569	-570 1 -570				-561 28 -600 66 -489 -570 -580 -600	10 S
20 S	-575 24 -610 10 -542 -575 -606 -610	-545 5 -550 4 -540 -545 -550 -550	-570 1 -570				-557 27 -610 41 -496 -560 -580 -610	20 S
30 S	-580 8 -590 3 -570 -580 -587 -590	-553 12 -570 3 -540 -550 -564 -569	-570 2 -570 -570 -570 -570				-561 22 -590 15 -530 -570 -588 -590	30 S
40 S	-586 7 -580 7 -560 -560 -570 -579		-570 2 -570 -570 -570 -570				-559 20 -590 17 -513 -560 -574 -587	40 S
	-563 8 -570 4 -551 -565 -570 -570		-570 2 -570 -570 -570 -570				-559 16 -580 18 -527 -560 -573 -580	
			-560 1 -560				-552 7 -560 15 -540 -550 -560 -560	
				-560 1 -560			-561 6 -570 13 -550 -560 -570 -570	
				-570 2 -570 -570 -570 -570			-559 13 -570 15 -526 -560 -570 -570	
				-585 5 -590 2 -580 -585 -588 -590			-555 22 -590 16 -520 -560 -576 -587	
				-580 2 -580 -580 -580 -580			-565 19 -609 11 -542 -560 -580 -604	
				-600 2 -600 -600 -600 -600			-554 28 -600 10 -520 -555 -582 -600	
				-630 1 -630			-556 38 -630 14 -493 -555 -579 -627	
							-572 58 -670 21 -464 -570 -642 -670	

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 410

LAT.

70 N							70 N
						-460 1	
60					-510 43 -560 5 -444 -510 -554 -559	-465 59 -549 4 -401 -455 -521 -546	60
					-520 41 -589 17 -446 -520 -570 -584	-530 1	
50					-568 47 -659 19 -464 -570 -602 -653	-638 44 -670 5 -558 -660 -664 -669	50
	-505 35 -540 2 -471 -505 -529 -539			-614 17 -640 11 -590 -610 -630 -638	-609 28 -640 8 -561 -615 -639 -640	-530 8 -540 3 -520 -530 -537 -540	
40	-527 12 -550 6 -511 -525 -534 -548			-597 26 -630 16 -536 -600 -620 -627	-628 8 -640 4 -620 -625 -635 -639	-550 20 -570 2 -531 -550 -564 -569	40
	-548 26 -580 4 -512 -550 -570 -579			-558 54 -640 8 -503 -520 -620 -637			
30	-540 30 -570 2 -511 -540 -560 -569			-570 21 -600 6 -541 -570 -592 -599			30
			-578 4 -580 4 -571 -580 -580 -580	-577 12 -590 3 -561 -580 -587 -590		-590 3 -590 -590 -590 -590	
20		-553 17 -570 3 -531 -560 -567 -570	-583 9 -590 3 -571 -590 -590 -590				20
			-580 10 -590 2 -570 -580 -587 -590				
10							
0							
10							
20						-613 34 -660 3 -581 -600 -641 -658	20
					-575 15 -590 2 -561 -575 -585 -589	-610 43 -670 3 -571 -590 -644 -667	
30					-571 54 -620 7 -470 -590 -620 -620		30
				-480 1	-554 38 -610 8 -493 -555 -595 -609		
40 S							40 S

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 410

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N		-446 22 -470 5 -420 -460 -464 -469	-452 27 -490 5 -412 -450 -477 -488	-456 40 -576 14 -423 -440 -479 -557	-483 25 -510 3 -452 -490 -504 -509		-457 35 -575 27 -415 -450 -488 -544	70 N
		-470 29 -510 10 -432 -460 -506 -510	-467 24 -490 7 -425 -460 -490 -490	-483 46 -589 26 -425 -470 -530 -585	-517 53 -619 22 -440 -515 -573 -618		-490 48 -618 66 -423 -480 -540 -604	
60		-501 42 -609 14 -453 -490 -509 -602	-475 27 -510 4 -441 -475 -500 -509	-477 41 -559 6 -432 -470 -496 -552	-507 42 -599 40 -448 -500 -558 -592		-500 45 -608 73 -424 -490 -550 -596	60
	-620 1	-533 45 -620 26 -460 -525 -590 -620			-511 43 -599 20 -451 -495 -560 -592		-524 45 -620 65 -446 -520 -570 -620	
50		-589 44 -650 10 -511 -585 -640 -648	-561 58 -659 28 -471 -545 -630 -655	-563 52 -650 16 -473 -565 -612 -650	-628 18 -650 4 -602 -630 -640 -649	-615 5 -620 4 -610 -615 -620 -620	-576 55 -667 86 -467 -570 -640 -660	50
		-597 43 -670 25 -525 -590 -642 -670	-588 42 -659 32 -512 -595 -630 -654	-575 52 -639 20 -465 -595 -630 -636		-563 40 -610 4 -504 -570 -596 -608	-588 46 -670 105 -491 -590 -630 -659	
40		-597 47 -650 18 -510 -615 -643 -650	-593 34 -639 12 -513 -600 -612 -636	-587 33 -630 3 -551 -580 -614 -628			-589 42 -650 61 -510 -600 -630 -650	40
		-616 28 -650 7 -572 -620 -640 -649	-633 5 -640 3 -630 -630 -637 -640				-585 51 -649 22 -504 -595 -640 -646	
30		-620 30 -670 15 -563 -620 -648 -667					-600 40 -669 23 -523 -600 -640 -666	30
		-616 20 -650 10 -590 -615 -638 -648					-588 24 -649 20 -564 -590 -630 -646	
20		-606 14 -630 5 -591 -600 -617 -628					-585 26 -629 11 -536 -590 -604 -626	20
		-595 5 -600 2 -590 -595 -598 -600					-588 11 -600 4 -571 -590 -595 -599	
10								10
0								0
10								10
20							-613 34 -660 3 -581 -600 -641 -658	20
							-596 39 -669 5 -561 -590 -619 -664	
30							-571 54 -620 7 -470 -590 -620 -620	30
							-546 42 -610 9 -482 -550 -589 -608	
40 S								40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

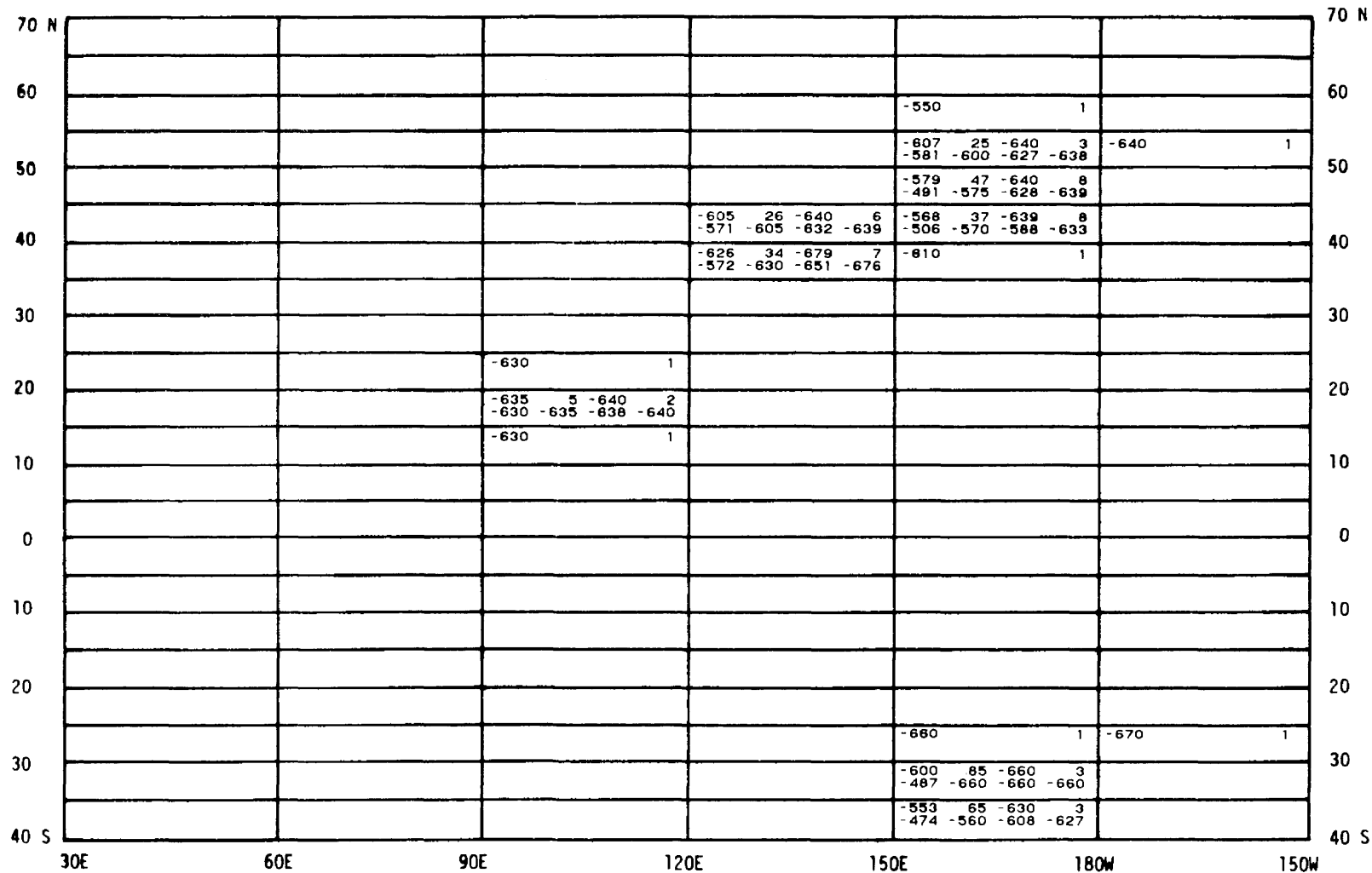
## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE

FL 430

LAT.



CODE :

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JUNE  
FL 430

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

70 N		-440	1					-440	1	70 N
		-483 26 -520 3 -460 -470 -504 -518	-500 -500 -500 2 -500 -500 -500 -500					-490 22 -520 5 -461 -500 -507 -518	5	
60		-507 23 -550 6 -481 -500 -526 -547	-490 1					-510 25 -550 8 -481 -500 -546 -550	8	60
		-533 40 -599 4 -501 -515 -562 -595	-536 46 -610 5 -491 -510 -584 -607					-559 54 -640 13 -492 -570 -612 -640	13	
50		-538 26 -570 4 -502 -540 -560 -569	-567 26 -590 3 -532 -580 -587 -590	-580 60 -640 2 -522 -580 -621 -638	-630 1			-571 48 -640 18 -487 -570 -630 -640	18	50
		-670 1	-600 22 -630 3 -580 -590 -617 -628	-636 44 -709 5 -591 -620 -678 -706				-601 45 -707 23 -518 -590 -640 -692	23	
40		-670 1	-641 18 -660 13 -597 -640 -651 -660	-597 45 -650 3 -542 -600 -634 -648				-631 32 -679 25 -554 -640 -652 -675	25	40
		-603 19 -620 4 -572 -610 -615 -619	-617 34 -650 3 -572 -630 -644 -649					-609 27 -650 7 -570 -610 -631 -648	7	
30		-595 35 -630 2 -561 -595 -619 -629						-595 35 -630 2 -561 -595 -619 -629	2	30
								-630 1	1	
20								-635 5 -640 2 -630 -635 -638 -640	2	20
								-630 1	1	
10										10
0										0
10										10
20										20
30								-665 5 -670 2 -660 -665 -668 -670	2	30
								-600 85 -660 3 -487 -660 -660 -660	3	
40 S								-553 65 -630 3 -474 -560 -608 -627	3	40 S
	150W	120W	90W	60W	30W	0	30E			

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 270

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N
60						60
50						50
40						40
	-215 23 -250 4 -191 -210 -236 -248			-234 33 -309 11 -200 -220 -270 -302		
30				-225 5 -230 2 -220 -225 -228 -230		
	-197 5 -200 3 -190 -200 -200 -200	-180 1		-227 12 -240 3 -211 -230 -237 -240		
20			-185 22 -220 4 -161 -180 -201 -218		-265 32 -346 40 -228 -260 -298 -327	20
	-200 23 -230 6 -170 -205 -222 -229	-220 28 -260 6 -182 -215 -252 -259	-250 1		-258 19 -280 4 -231 -260 -275 -279	
10		-214 25 -240 5 -181 -220 -240 -240	-234 17 -260 13 -202 -240 -250 -258			10
		-255 5 -260 2 -250 -255 -258 -260				
0		-227 17 -250 3 -210 -220 -240 -249				0
10						10
20				-213 5 -220 3 -210 -210 -217 -220	-225 15 -240 2 -211 -225 -235 -239	20
30						30
		-341 38 -409 8 -293 -335 -378 -406	-420 10 -430 2 -410 -420 -427 -430	-394 31 -449 7 -352 -390 -421 -446		
40 S			-444 12 -460 5 -430 -450 -454 -459	-427 56 -480 3 -354 -450 -470 -479		40 S
	30E	60E	90E	120E	150E	180W

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

JULY  
FL 270

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

TABULATED TEMPERATURES = °C \* 10

[illegible]

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 290

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N
60						60
50						50
40	-310 50 -379 3 -270 -280 -348 -376					40
	-298 61 -389 4 -224 -290 -347 -385			-274 21 -310 16 -243 -280 -290 -307		
30	-222 13 -249 12 -202 -225 -230 -246					30
	-223 13 -240 4 -210 -220 -235 -239	-190 1		-270 10 -280 2 -260 -270 -277 -280		
20	-213 9 -220 3 -201 -220 -220 -220	-220 17 -250 6 -200 -220 -234 -248	-240 10 -250 2 -230 -240 -247 -250			-313 24 -366 63 -270 -320 -330 -350
		-220 20 -240 2 -201 -220 -234 -239	-238 19 -260 6 -211 -240 -260 -260	-287 5 -290 3 -280 -290 -290 -290	-290 1	-287 17 -319 7 -262 -290 -291 -316
10		-267 5 -270 3 -260 -270 -270 -270	-256 21 -290 5 -231 -260 -271 -288	-274 11 -290 13 -252 -280 -281 -290	-290 1	
		-290 -290 -290 -290	-260 1	-270 -270 -270 -270		
0		-285 5 -290 2 -280 -285 -288 -290	-285 5 -290 2 -280 -285 -288 -290	-275 5 -280 2 -270 -275 -278 -280		
			-267 5 -270 3 -260 -270 -270 -270	-265 5 -270 2 -260 -265 -268 -270		
10			-267 9 -280 3 -260 -260 -274 -279	-270 1		
			-255 5 -260 2 -250 -255 -258 -260	-260 1		-310 1
20			-260 1	-260 1	-302 25 -330 5 -262 -310 -324 -329	-280 1
			-310 -310 -310 -310			
30			-370 35 -429 5 -331 -370 -398 -426			
			-407 9 -420 3 -400 -400 -414 -419	-444 26 -490 5 -420 -440 -464 -487	-425 49 -489 8 -324 -435 -458 -486	
40 S				-464 26 -510 12 -420 -465 -485 -508	-443 49 -519 8 -366 -445 -488 -516	
	30E	60E	90E	120E	150E	180W
	LONGITUDE					150W

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 290

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

[illegible]

LONGITUDE

263

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 310

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N						
60						
50						
40						
30	-286 14 -300 5 -262 -290 -294 -299			-329 22 -360 13 -292 -330 -351 -360	-310 1	
20	-277 16 -319 18 -260 -280 -290 -313			-315 5 -320 2 -310 -315 -318 -320		
10	-281 18 -310 7 -260 -280 -300 -309	-267 18 -318 15 -240 -270 -278 -309		-300 10 -310 2 -290 -300 -307 -310		-373 25 -400 3 -342 -380 -394 -399
0	-283 12 -300 3 -270 -280 -294 -299	-278 18 -319 11 -252 -270 -294 -316	-293 31 -349 6 -261 -285 -318 -346		-385 5 -390 2 -380 -385 -388 -390	-364 26 -435 82 -306 -370 -380 -420
10 S		-283 29 -320 3 -251 -280 -307 -318	-320 1	-327 21 -350 3 -301 -330 -344 -349	-358 19 -380 4 -331 -360 -375 -379	-343 14 -370 6 -330 -340 -354 -368
20 S		-320 1	-322 12 -330 5 -302 -330 -330 -330	-334 17 -360 14 -310 -330 -350 -360		-328 10 -350 9 -312 -330 -330 -347
30 S		-320 1	-334 10 -350 5 -321 -330 -344 -349			-331 13 -350 8 -311 -335 -340 -349
40 S		-310 1	-325 5 -330 2 -320 -325 -328 -330			-336 10 -350 5 -321 -340 -344 -349
50 S			-325 5 -330 2 -320 -325 -328 -330			-340 1
60 S			-350 17 -370 5 -330 -360 -364 -369	-320 1		
70 S			-348 20 -370 6 -320 -360 -362 -369	-320 -320 -320 -320		-355 5 -360 2 -350 -355 -358 -360
80 S			-353 29 -390 6 -311 -360 -382 -389	-323 13 -350 7 -310 -320 -331 -348	-342 20 -370 6 -312 -340 -362 -369	-340 -340 -340 -340
90 S			-366 39 -410 7 -311 -360 -410 -410	-327 18 -369 12 -310 -320 -342 -366	-350 -350 -350 -350	
100 S			-443 26 -480 3 -420 -430 -464 -478	-386 41 -460 11 -330 -390 -420 -458	-365 5 -370 2 -360 -365 -368 -370	
110 S			-450 -450 -450 -450	-464 29 -510 15 -410 -470 -490 -507	-451 48 -530 13 -382 -450 -502 -528	
120 S				-489 33 -550 11 -434 -480 -516 -548	-470 13 -490 5 -460 -460 -484 -489	
130 S						
140 S						
150 S						

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 310

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

			-480	1	-460	1		-470 10 -480 2 -460 -470 -477 -480
-530 10 -540 2 -520 -530 -537 -540		-480 1	-460 1	-455 5 -460 4 -450 -455 -460 -460			-478 32 -540 8 -450 -460 -515 -537	
	-450 1		-480 -480 -480 2 -480 -480 -480 -480	-463 21 -509 9 -432 -460 -470 -504	-435 5 -440 2 -430 -435 -438 -440	-461 21 -509 14 -430 -460 -479 -502		
-410 1	-450 20 -470 2 -431 -450 -464 -469			-445 28 -479 21 -394 -460 -470 -476	-453 22 -490 4 -440 -440 -466 -487	-445 27 -489 28 -395 -450 -470 -485		
-434 17 -460 5 -411 -440 -447 -458	-435 25 -460 2 -411 -435 -452 -459	-420 10 -430 2 -410 -420 -427 -430	-454 21 -480 7 -422 -450 -480 -480		-460 16 -480 3 -441 -460 -474 -479	-444 23 -480 19 -410 -440 -471 -480		
-440 1	-384 31 -459 45 -329 -390 -410 -451	-381 37 -450 52 -320 -380 -420 -450			-403 31 -430 3 -362 -420 -427 -430	-384 35 -457 101 -320 -390 -420 -450		
-390 27 -467 23 -354 -380 -410 -452	-368 26 -419 22 -324 -360 -396 -416	-385 17 -400 4 -361 -390 -400 -400			-358 59 -420 4 -282 -365 -415 -419	-362 41 -461 72 -284 -365 -400 -430		
-384 29 -440 39 -335 -380 -410 -440	-369 29 -420 15 -316 -370 -390 -420				-280 1	-352 52 -440 75 -260 -360 -400 -435		
-373 32 -430 6 -341 -360 -406 -427						-301 50 -427 33 -240 -280 -350 -411		
-335 15 -350 2 -321 -335 -345 -349						-349 41 -434 106 -261 -360 -380 -420		
	-350 10 -360 2 -340 -350 -357 -360					-334 31 -379 19 -261 -340 -361 -376		
		-365 11 -380 4 -351 -365 -375 -379				-334 18 -379 33 -306 -330 -350 -374		
						-331 12 -350 14 -313 -330 -340 -350		
			-330 1			-330 12 -350 9 -312 -330 -340 -348		
			-340 -340 -340 2 -340 -340 -340 -340			-334 8 -340 5 -321 -340 -340 -340		
			-340 1			-344 18 -370 7 -321 -340 -360 -369		
						-342 20 -370 11 -320 -350 -360 -368		
						-339 24 -389 21 -310 -340 -360 -386		
						-342 32 -410 21 -310 -330 -368 -410		
						-394 44 -479 16 -330 -395 -442 -474		
						-457 38 -529 30 -386 -450 -494 -524		
						-483 30 -550 16 -436 -480 -500 -547		
150W	120W	90W	60W	30W	0	30E		

70 N

60

50

40

30

20

10

0

10

20

30

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

APPENDIX C  
STATIC AIR TEMPERATURE CLIMATOLOGY

CODE:	MEAN	ST. DEV.	.3%	N
	98%	50%	16%	2%

JULY  
FL 330

TABULATED TEMPERATURES = °C \* 10

LAT.	70 N	60	50	40	30	20	10	0	10	20	30	40 S	LONGITUDE
70 N													30E
60													60E
50													90E
40													120E
30													150E
20													180W
10													150W
0													
10													
20													
30													
40 S													

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 330

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

		-410	1	-487 19 -500 3 -462 -500 -500 -500	-490	1		-472 34 -500 5 -414 -490 -500 -500
-550	1	-523 9 -530 3 -511 -530 -530 -530			-493 5 -500 3 -490 -490 -497 -500			-514 21 -550 7 -490 -510 -531 -548
	-520 -520 -520 2 -520 -520 -520 -520	-540	1	-525 11 -530 6 -503 -530 -530 -530	-506 22 -539 12 -487 -510 -520 -536	505 15 -520 2 491 -505 -515 -519	-510 26 -540 24 -439 -520 -530 -540	
-460	1			-485 46 -559 17 -413 -490 -540 -554	-482 31 -549 38 -437 -480 -511 -543	495 25 -520 2 471 -495 -512 -519	-481 36 -558 61 -422 -480 -520 -548	
-465 32 -500 4 -422 -470 -495 -499	-492 18 -510 6 -462 -495 -510 -510	-443 30 -480 8 -401 -440 -479 -480	-462 31 -520 15 -416 -450 -488 -517	-470 20 -490 2 -451 -470 -484 -488	475 17 -500 4 460 -470 -490 -499	-463 32 -519 44 -409 -460 -500 -511		
-498 7 -510 5 -490 -500 -504 -509	-434 38 -499 25 -370 -450 -470 -490	-430 32 -488 57 -371 -430 -460 -480			419 35 -460 7 370 -440 -450 -459	-430 39 -507 110 -362 -430 -470 -500		
-436 23 -489 34 -400 -430 -460 -483	-407 23 -450 23 -370 -410 -430 -450	-428 18 -450 4 -410 -425 -445 -449			393 40 -450 3 360 -370 -424 -447	-404 42 -487 101 -310 -410 -440 -480		
-420 27 -490 80 -370 -420 -440 -484	-408 20 -449 13 -375 -400 -430 -445					-404 42 -490 113 -302 -410 -440 -478		
-424 29 -488 52 -380 -420 -450 -480	-405 7 -410 8 -391 -410 -410 -410					-401 52 -487 97 -290 -410 -450 -480		
-420 29 -470 8 -381 -415 -455 -469	-410 17 -440 7 -390 -410 -421 -438					-408 37 -470 112 -320 -410 -440 -460		
	-410 14 -430 7 -390 -410 -420 -429					-393 32 -460 51 -330 -400 -420 -460		
	-395 5 -400 2 -390 -395 -398 -400	-413 13 -430 4 -400 -410 -425 -429				-384 21 -439 28 -356 -380 -400 -434		
						-367 12 -399 12 -352 -380 -372 -396		
						-378 11 -400 8 -361 -380 -380 -397		
						-372 12 -399 13 -360 -370 -380 -395		
						-382 22 -420 12 -360 -380 -410 -418		
						-375 21 -419 11 -360 -360 -394 -416		
						-375 23 -410 17 -343 -370 -410 -410		
						-379 25 -410 18 -330 -375 -403 -410		
						-414 24 -469 22 -374 -410 -440 -462		
						-476 42 -549 38 -407 -475 -520 -543		
						-525 40 -589 19 -454 -520 -580 -586		
150W	120W	90W	60W	30W	0	30E		

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 350

LAT.

70 N

70 N							
60						-567    5 -570    3 -560 -570 -570 -570	
					-535    5 -540    2 -530 -535 -538 -540	-490    33 -530    6 -441 -505 -514 -528	
50					-500    35 -540    4 -461 -500 -535 -539	-470                  1	
					-471    32 -530    8 -441 -460 -513 -529	-495    45 -540    2 -452 -495 -526 -538	
40	-453    39 -519    7 -402 -460 -482 -515			-435    5 -440    2 -430 -435 -438 -440	-468    32 -529    12 -430 -460 -495 -526		
	-400    28 -450    21 -352 -400 -420 -450			-454    24 -490    17 -423 -450 -484 -490	-450    21 -480    4 -422 -450 -466 -478		
30	-381    17 -400    11 -360 -380 -400 -400			-430    7 -440    4 -421 -430 -435 -439	-471    20 -510    10 -442 -470 -491 -508	-465    15 -480    2 -451 -465 -475 -479	
	-380    8 -390    3 -370 -380 -387 -390	-390    14 -400    6 -363 -395 -400 -400		-423    15 -440    6 -401 -425 -440 -440	-492    15 -510    5 -471 -500 -504 -509	-487    26 -530    37 -430 -490 -510 -530	
20	-370         -370    3 -370 -370 -370 -370	-390    17 -420    8 -370 -385 -409 -419	-407    24 -440    6 -371 -415 -424 -438	-416    16 -440    5 -400 -410 -434 -439	-469    17 -509    13 -442 -470 -481 -505	-471    23 -527    109 -422 -470 -490 -520	
		-403    5 -410    6 -400 -400 -410 -410	-399    26 -440    8 -370 -395 -435 -440	-444    5 -450    7 -440 -440 -450 -450	-454    19 -499    23 -430 -450 -475 -496	-480                  1	
10		-417    11 -430    6 -401 -415 -430 -430	-418    15 -440    5 -401 -410 -434 -439	-437    15 -460    27 -400 -440 -450 -460	-430                  1		
		-427    7 -440    6 -420 -425 -432 -439	-427    17 -450    3 -410 -420 -440 -449	-408    8 -420    4 -400 -405 -415 -419		-442    16 -450    5 -413 -450 -450 -450	
0		-433    7 -440    6 -421 -435 -440 -440	-423    5 -430    3 -420 -420 -427 -430	-405    11 -420    4 -391 -405 -415 -419		-440    21 -460    9 -403 -450 -460 -460	
		-426    19 -450    8 -400 -435 -440 -449	-425    14 -440    10 -400 -430 -440 -440	-410    14 -430    3 -400 -400 -420 -429		-441    15 -460    13 -412 -440 -460 -460	
10			-419    15 -440    14 -393 -420 -430 -440	-420    12 -430    6 -401 -425 -430 -430		-443    16 -470    11 -412 -440 -454 -468	
			-409    17 -430    10 -382 -405 -430 -430	-420    10 -440    8 -410 -420 -429 -439	-448    11 -460    4 -431 -450 -455 -459	-447    10 -460    10 -430 -450 -456 -460	
20			-402    19 -430    10 -364 -405 -416 -428	-428    9 -440    6 -420 -425 -440 -440	-447    9 -460    7 -431 -450 -450 -459	-457    7 -470    6 -450 -455 -462 -469	
			-386    19 -410    7 -352 -390 -400 -409	-440    14 -450    3 -421 -450 -450 -450	-449    13 -460    12 -422 -450 -480 -460	-470    40 -549    6 -423 -460 -494 -543	
30			-428    23 -470    6 -401 -425 -446 -467	-415    5 -420    2 -410 -415 -418 -420	-471    27 -557    17 -436 -460 -480 -541	-491    38 -560    8 -443 -480 -535 -557	
			-490    49 -569    6 -423 -485 -538 -566	-507    52 -589    10 -411 -510 -552 -586	-496    35 -559    20 -440 -500 -530 -556		
40 S				-536    32 -579    18 -464 -540 -570 -577	-470    56 -579    7 -412 -460 -522 -573		
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 350

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N

60

50

40

30

20

10

0

10

20

30

40S

-530 29 -570 3 -501 -520 -554 -568		-400 1	-505 39 -560 4 -453 -505 -536 -557	-535 15 -550 2 -521 -535 -545 -549		-508 49 -570 10 -409 -515 -556 -568
-534 21 -570 11 -510 -530 -558 -570	-519 54 -599 12 -421 -530 -580 -596		-490 22 -520 3 -470 -480 -507 -518	-505 42 -560 10 -421 -510 -541 -558		-521 43 -598 39 -410 -530 -569 -585
-530 23 -570 4 -511 -520 -546 -567	-492 56 -580 14 -403 -490 -550 -577	-515 38 -560 4 -462 -520 -550 -559	-542 15 -560 5 -521 -550 -554 -559	-511 38 -559 22 -420 -520 -546 -556	-543 12 -560 3 -530 -540 -554 -559	-511 43 -578 60 -412 -520 -550 -570
-519 43 -570 9 -433 -530 -562 -570	-498 40 -569 6 -443 -500 -522 -564	-513 38 -589 24 -448 -520 -550 -565	-506 30 -578 19 -464 -500 -531 -569	-509 41 -588 26 -425 -500 -550 -575	-535 17 -570 11 -512 -530 -554 -568	-512 38 -590 100 -430 -510 -550 -580
-530 27 -560 9 -475 -540 -550 -558	-518 25 -569 6 -500 -510 -530 -565	-500 32 -579 30 -449 -490 -527 -574	-492 39 -569 15 -430 -500 -533 -562	-505 45 -550 2 -482 -505 -536 -548	-528 24 -560 14 -485 -530 -558 -560	-505 36 -577 86 -430 -500 -540 -570
-509 24 -550 25 -470 -510 -540 -550	-485 32 -540 60 -420 -490 -520 -538	-481 25 -538 63 -440 -480 -501 -530	-500 30 -530 2 -471 -500 -520 -529		-491 35 -539 19 -411 -500 -520 -536	-485 32 -550 190 -420 -490 -520 -540
-484 30 -557 80 -430 -480 -520 -550	-462 18 -500 54 -421 -460 -480 -500	-462 16 -490 11 -440 -460 -474 -488			-396 17 -420 5 -372 -390 -414 -419	-463 37 -554 202 -380 -460 -490 -540
-475 30 -535 166 -420 -480 -510 -530	-450 19 -480 9 -420 -450 -467 -478				-360 1	-467 37 -534 203 -370 -470 -500 -530
-477 28 -536 124 -430 -480 -510 -530	-470 1					-473 35 -535 182 -390 -480 -510 -530
-465 19 -518 35 -437 -460 -480 -506	-473 7 -480 6 -461 -475 -480 -480					-461 32 -524 185 -370 -460 -490 -520
-456 8 -470 10 -442 -460 -460 -468	-470 7 -480 9 -460 -470 -477 -480					-444 29 -498 64 -373 -450 -470 -487
-453 7 -480 7 -441 -450 -460 -460	-440 10 -450 2 -430 -440 -447 -450	-465 5 -470 13 -460 -470 -470 -470				-441 20 -470 61 -400 -440 -460 -470
-450 -450 -450 2 -450 -450 -450 -450		-430 1	-450 1			-430 18 -450 22 -400 -430 -450 -450
			-450 1			-430 19 -460 23 -394 -430 -450 -460
						-430 18 -460 34 -400 -430 -447 -460
						-427 19 -469 31 -396 -430 -442 -464
						-428 21 -460 32 -386 -430 -450 -460
						-430 26 -469 29 -371 -430 -450 -464
						-437 38 -544 28 -361 -450 -460 -512
						-465 38 -560 33 -406 -460 -480 -560
						-498 43 -588 36 -414 -500 -530 -576
						-518 50 -580 25 -420 -530 -570 -580

150W

120W

90W

60W

30W

0

30E

LONGITUDE

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

JULY

FL 370

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	150W	120W	90W	60W	30W	0	30E	40S	70 N
	-510 53 -590 6 -451 -495 -574 -588	-407 5 -410 3 -400 -410 -410 -410	-396 14 -410 5 -372 -400 -404 -409	-544 58 -590 9 -421 -570 -590 -590	-595 5 -600 2 -590 -595 -598 -600			-494 81 -599 25 -384 -480 -590 -595	
60	-538 54 -600 16 -453 -550 -590 -597	-482 40 -559 13 -412 -480 -521 -553		-524 40 -570 7 -464 -520 -570 -570	-518 74 -599 11 -410 -570 -580 -596			-516 58 -600 50 -410 -510 -582 -600	
	-536 40 -580 12 -470 -540 -580 -580	-479 30 -549 7 -451 -470 -483 -542	-511 66 -590 7 -441 -470 -590 -590	-497 50 -579 10 -403 -500 -540 -573	-517 62 -580 10 -414 -530 -580 -580	-560 20 -580 2 -541 -560 -574 -579		-515 58 -620 71 -410 -510 -580 -616	60
50	-534 50 -590 9 -431 -550 -577 -588	-529 42 -580 8 -461 -545 -568 -579	-524 47 -610 14 -453 -525 -568 -607	-505 55 -580 11 -420 -480 -580 -580	-538 39 -600 17 -473 -550 -580 -597	-560 42 -590 3 -504 -590 -590 -590		-528 50 -610 92 -408 -540 -580 -602	50
	-520 71 -590 14 -395 -560 -570 -590	-538 36 -589 24 -475 -540 -580 -585	-562 37 -610 15 -493 -580 -590 -607	-555 41 -600 12 -469 -565 -592 -600	-570 1	-530 40 -570 2 -492 -530 -557 -568		-535 47 -607 108 -411 -550 -580 -600	
40	-558 32 -590 15 -477 -570 -580 -590	-511 20 -567 102 -480 -510 -530 -560	-521 31 -580 61 -456 -520 -550 -580	-540 1		-502 50 -570 5 -441 -510 -551 -568		-518 30 -590 213 -452 -510 -550 -580	40
	-517 32 -580 63 -452 -510 -550 -578	-503 18 -550 105 -470 -500 -520 -549	-495 5 -500 2 -490 -495 -498 -500			-490 1		-507 26 -580 205 -450 -500 -530 -569	
30	-505 27 -580 200 -460 -500 -530 -560	-505 26 -550 13 -462 -510 -531 -548						-505 28 -580 226 -460 -500 -530 -560	30
	-506 25 -570 180 -460 -500 -530 -560	-520 1						-509 28 -580 225 -460 -510 -540 -570	
20	-500 26 -559 41 -460 -500 -528 -552	-510 14 -530 3 -500 -500 -520 -529						-501 30 -570 182 -446 -500 -530 -560	20
		-510 9 -520 5 -500 -510 -520 -520						-497 22 -539 42 -450 -500 -520 -532	
10	-508 11 -520 4 -491 -510 -515 -519	-510 1	-515 6 -520 16 -503 -520 -520 -520					-499 20 -520 48 -440 -500 -520 -520	10
	-510 8 -520 3 -500 -510 -517 -520							-492 17 -520 19 -480 -490 -510 -520	
0								-493 14 -510 20 -464 -495 -510 -510	0
								-499 10 -520 16 -490 -500 -506 -520	
10								-505 11 -520 15 -483 -510 -510 -520	10
								-503 9 -520 19 -490 -500 -510 -520	
20								-503 13 -519 18 -470 -510 -510 -517	20
								-500 13 -529 18 -480 -500 -510 -523	
30								-489 22 -520 9 -483 -490 -510 -518	30
								-500 33 -568 30 -432 -510 -530 -558	
40 S								-518 56 -618 36 -404 -515 -580 -606	40S

LONGITUDE

## APPENDIX C

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

# STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 390

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 390

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-483 45 -616 11 -444 -470 -484 -594	-410 8 -420 3 -400 -410 -417 -420	-400 13 -420 6 -381 -400 -412 -419	-460 29 -490 3 -422 -470 -484 -489			-456 53 -616 26 -385 -465 -490 -595	70 N
60	-521 62 -630 15 -463 -500 -610 -627	-473 27 -519 12 -422 -480 -492 -516	-460 40 -500 5 -394 -480 -494 -499	-504 50 -599 10 -429 -490 -557 -595	-410 1		-498 55 -628 67 -413 -480 -544 -620	60
50	-508 30 -569 11 -462 -510 -532 -566	-516 46 -629 12 -464 -505 -537 -621	-479 31 -539 13 -432 -480 -511 -535	-510 57 -610 16 -429 -495 -576 -607	-506 57 -600 23 -414 -490 -570 -600	-580 1	-500 52 -627 109 -420 -490 -557 -610	50
40	-516 62 -619 12 -390 -510 -575 -613	-524 45 -610 16 -456 -520 -576 -607	-526 50 -590 9 -453 -520 -587 -590	-535 61 -619 8 -443 -550 -589 -616	-549 45 -600 13 -460 -560 -591 -600	-490 1	-529 56 -620 89 -428 -530 -590 -620	40
30	-533 74 -620 15 -384 -550 -608 -620	-537 34 -627 15 -490 -540 -558 -610	-561 41 -610 3 -474 -570 -594 -608	-560 55 -620 11 -442 -570 -614 -620	-527 34 -580 6 -474 -525 -556 -577	-530 1	-553 53 -630 113 -432 -560 -610 -620	30
20	-568 41 -629 10 -520 -565 -610 -626	-546 17 -590 37 -522 -540 -560 -590	-552 31 -610 39 -483 -550 -580 -610	-620 1			-554 31 -626 123 -490 -550 -590 -620	20
10	-546 29 -600 14 -510 -540 -579 -597	-545 15 -580 76 -505 -545 -560 -575	-570 1				-547 23 -606 124 -495 -550 -570 -595	10
0	-549 29 -608 58 -491 -550 -580 -600	-546 15 -579 14 -523 -550 -560 -575	-570 -570 -570 -570 3				-548 27 -607 89 -488 -550 -580 -600	0
10 S	-554 22 -599 43 -500 -560 -570 -592	-556 13 -580 7 -541 -550 -570 -579	-570 1				-556 26 -608 75 -495 -560 -580 -600	10 S
20 S	-554 19 -590 7 -531 -550 -571 -588	-560 12 -580 4 -550 -555 -570 -579					-554 26 -600 47 -498 -550 -586 -600	20 S
30 S	-553 5 -560 3 -550 -550 -557 -560						-551 9 -570 9 -540 -550 -557 -568	30 S
40 S	-554 5 -560 5 -550 -550 -560 -560						-555 10 -579 10 -542 -550 -560 -576	40 S
	-555 5 -560 4 -550 -555 -560 -560						-555 5 -560 12 -550 -555 -560 -560	
							-554 9 -570 16 -540 -560 -560 -567	
							-558 9 -570 14 -543 -560 -569 -570	
							-559 7 -570 13 -550 -560 -570 -570	
							-564 8 -570 11 -550 -570 -570 -570	
							-563 13 -580 7 -541 -570 -570 -579	
							-558 16 -580 6 -540 -560 -572 -579	
							-549 27 -570 7 -495 -560 -570 -570	
							-535 52 -630 15 -453 -540 -568 -630	
							-556 75 -680 17 -443 -540 -643 -680	

150W

120W

90W

60W

30W

0

30E

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 410

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 410

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

-485 55 -540 2 -432 -485 -522 -538							-485 55 -540 2 -432 -485 -522 -538
-540 1	-475 35 -510 2 -441 -475 -499 -509		-517 37 -570 6 -455 -520 -546 -567	-545 35 -580 2 -511 -545 -569 -579			-507 44 -580 13 -440 -510 -542 -578
	-506 19 -540 8 -480 -510 -519 -537		-505 50 -590 11 -422 -500 -550 -588	-518 48 -580 16 -432 -510 -566 -580	-520 30 -550 2 -491 -520 -540 -549		-510 47 -634 42 -420 -510 -560 -599
	-555 39 -630 17 -486 -550 -589 -627	-530 60 -590 2 -472 -530 -571 -588	-543 61 -620 11 -426 -540 -608 -620	-509 38 -569 9 -452 -500 -540 -565			-537 50 -638 53 -450 -540 -580 -630
-575 56 -670 11 -498 -550 -646 -668	-572 45 -629 22 -484 -590 -616 -626	-601 24 -649 19 -554 -610 -611 -646	-625 5 -630 2 -620 -625 -628 -630		-520 1		-577 47 -667 85 -480 -585 -620 -660
-596 56 -690 17 -513 -600 -664 -687	-580 29 -620 23 -520 -580 -610 -620	-569 49 -629 37 -460 -590 -612 -623			-520 22 -540 3 -492 -530 -537 -540		-574 45 -687 108 -480 -580 -610 -669
-596 20 -630 13 -565 -600 -620 -628	-587 12 -600 18 -557 -590 -600 -600						-585 23 -629 46 -529 -590 -608 -621
-590 14 -610 8 -563 -590 -600 -609	-580 1						-585 17 -610 10 -552 -590 -600 -608
-595 22 -630 13 -550 -590 -612 -630							-587 27 -630 18 -540 -590 -613 -630
-602 15 -630 10 -582 -600 -616 -628							-589 23 -629 19 -540 -590 -610 -628
-606 10 -620 8 -591 -605 -619 -620							-606 14 -639 12 -590 -600 -620 -636
-607 5 -610 3 -600 -610 -610 -610							-608 4 -610 5 -601 -610 -610 -610
-590 1							-603 9 -610 3 -591 -610 -610 -610
							-610 1
							-610 16 -630 3 -591 -610 -624 -629
							-598 29 -630 4 -561 -600 -625 -629
							-595 43 -660 6 -551 -575 -652 -659
							-557 40 -610 6 -501 -565 -594 -608
							-581 76 -689 10 -462 -590 -666 -686

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY

FL 430

LAT.		LONGITUDE						LAT.	
70 N		30E	60E	90E	120E	150E	180W	70 N	
60								60	
50						-593 24 -620 4 -561 -595 -615 -619		50	
40					-575 17 -590 4 -551 -580 -590 -590	-590 53 -650 5 -523 -580 -624 -647	-560 1	40	
30					-612 19 -640 6 -582 -615 -624 -638	-640 1		30	
20							-670 1 -660 1	20	
10								10	
0								0	
10								10	
20								20	
30						-573 5 -580 3 -570 -570 -577 -580		30	
40 S						-550 33 -590 8 -501 -550 -589 -590		40 S	

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

JULY  
FL 430

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

TABULATED TEMPERATURES = °C \* 10

[illegible]

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 270

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N
60						60
50						50
40	-250 1					40
	-249 48 -358 7 -211 -230 -264 -348			-214 30 -279 19 -164 -210 -250 -273		
30	-206 26 -250 5 -172 -200 -224 -247			-213 5 -220 3 -210 -210 -217 -220		30
	-188 26 -220 5 -152 -190 -214 -219	-223 40 -280 3 -190 -200 -254 -277		-277 5 -280 3 -270 -280 -280 -280		
20	-183 25 -210 3 -152 -190 -204 -209	-210 15 -230 11 -176 -210 -224 -230	-204 37 -289 9 -170 -200 -232 -282		-257 24 -318 22 -214 -260 -276 -307	20
		-216 21 -240 5 -191 -210 -240 -240	-223 25 -279 8 -200 -215 -238 -274		-230 24 -270 5 -201 -230 -251 -268	
10		-230 1	-220 13 -240 12 -200 -220 -232 -240	-253 32 -300 7 -204 -260 -281 -298		10
			-240 1			
0			-225 24 -250 6 -183 -235 -242 -249			0
			-230 12 -250 4 -220 -225 -240 -249			
10						10
					-200 20 -220 2 -181 -200 -214 -219	
20				-220 1	-244 35 -280 5 -185 -250 -274 -279	20
				-270 1		
				-277 25 -310 3 -251 -270 -297 -308		
30			-333 48 -400 6 -256 -335 -376 -397	-359 38 -410 14 -288 -365 -399 -410	-399 38 -460 11 -334 -400 -438 -458	30
				-407 26 -450 10 -374 -395 -437 -450	-412 23 -450 5 -362 -410 -431 -448	
40 S						40 S

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 270

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N					-420	1		-420	1	70 N
					-420	1		-420	1	
60							-370 10 -380 2 -360 -370 -377 -380	-370 10 -380 2 -360 -370 -377 -380		60
					-375 34 -449 10 -332 -370 -400 -441		-362 30 -420 9 -323 -350 -394 -417	-369 33 -448 19 -324 -360 -400 -439		
50		-290	1				-364 48 -525 15 -330 -350 -378 -494	-359 50 -524 16 -302 -350 -376 -491		50
	-300	1	-291 31 -340 9 -243 -280 -327 -338	-287 36 -377 38 -227 -260 -330 -358			-344 53 -459 14 -275 -330 -379 -455	-300 46 -456 63 -230 -290 -331 -426		40
40	-289 24 -339 25 -255 -290 -312 -335	-284 19 -310 5 -261 -280 -304 -309	-295 15 -310 2 -281 -295 -305 -309				-285 26 -329 10 -242 -285 -306 -326	-263 44 -356 68 -173 -270 -303 -337		40
	-249 23 -299 14 -213 -250 -269 -292	-266 26 -329 22 -224 -260 -290 -322						-250 32 -327 44 -196 -250 -281 -313		30
30								-222 46 -280 11 -154 -210 -280 -280		30
		-260	1					-231 37 -316 46 -168 -230 -270 -293		20
20		-280 40 -320 2 -242 -280 -307 -318						-228 31 -318 20 -194 -220 -240 -305		20
			-237 5 -240 3 -230 -240 -240 -240					-233 25 -299 23 -200 -230 -250 -291		10
10			-273 12 -290 3 -260 -270 -284 -289					-265 18 -290 4 -241 -265 -280 -289		10
								-225 24 -250 6 -183 -235 -242 -249		0
0								-230 12 -250 4 -220 -225 -240 -248		0
10								-200 20 -220 2 -181 -200 -214 -219		10
	-280	1						-246 34 -280 7 -185 -250 -280 -280		20
20				-347 12 -360 3 -331 -350 -357 -360				-328 35 -360 4 -274 -340 -355 -359		20
								-277 25 -310 3 -251 -270 -297 -308		30
30				-400	1			-369 47 -459 32 -269 -375 -410 -454		30
								-409 25 -450 15 -373 -400 -443 -450		40S
40 S	150W	120W	90W	60W	30W	0	30E			

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 290

LAT.

70 N						70 N	
60						60	
50						50	
40	-378 71 -450 4 -284 -390 -445 -449					40	
	-313 73 -449 16 -293 -300 -416 -444			-290 31 -349 10 -250 -285 -320 -345			
	-266 37 -368 28 -205 -260 -290 -354	-230 1		-230 1			
30	-248 23 -280 11 -200 -250 -270 -278	-236 28 -308 9 -210 -230 -237 -299		-290 50 -340 2 -242 -290 -324 -338		30	
	-231 11 -250 6 -220 -230 -240 -249	-233 25 -317 20 -210 -230 -250 -297	-247 26 -299 10 -212 -250 -266 -295		-308 33 -390 37 -252 -310 -340 -390	20	
20		-246 18 -270 7 -220 -250 -260 -269	-246 14 -270 9 -230 -240 -260 -268	-285 25 -310 2 -261 -285 -302 -309	-258 16 -280 5 -240 -260 -274 -279		
		-271 16 -290 7 -242 -280 -280 -289	-259 29 -300 10 -205 -260 -286 -298	-286 26 -310 5 -251 -300 -310 -310			
10		-293 11 -300 6 -272 -300 -300 -300	-276 11 -290 8 -260 -280 -289 -290				
		-310 16 -310 2 -310 -310 -310 -310	-282 16 -310 12 -262 -280 -302 -310				
0		-310 1	-287 13 -310 7 -271 -280 -300 -309				
			-283 11 -300 4 -271 -280 -290 -299				
10			-275 5 -280 2 -270 -275 -278 -280	-276 22 -300 5 -242 -270 -300 -300	-247 17 -270 3 -230 -240 -260 -269		
			-280 2 -280 -280 -280 -280	-270 1	-268 32 -329 5 -241 -250 -292 -325	-268 37 -330 6 -240 -245 -314 -328	20
20			-294 23 -339 5 -280 -280 -308 -336	-280 1	-320 1		
			-320 42 -409 7 -281 -310 -352 -403	-310 16 -330 3 -291 -310 -324 -329	-330 1		
30			-383 45 -420 3 -324 -410 -417 -420	-418 54 -519 13 -325 -420 -462 -510	-432 27 -480 13 -392 -430 -470 -478		30
				-447 35 -519 21 -400 -440 -486 -516	-440 25 -460 5 -402 -460 -460 -460		
40 S						40 S	
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 290

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

**70 N**

60

50

40

30

20

10

0

10

20

30

40 S

40 3 150W

120W

90W

60W

30W

0

30E

70 N

60

50

40

30

20

10

0

10

20

30

403

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 310

LAT.

70 N							70 N
60							60
						-420 1	
50							50
40	-354 21 -380 7 -321 -360 -380 -380						40
	-326 30 -390 17 -286 -320 -349 -390			-328 34 -398 17 -273 -330 -360 -387	-367 26 -390 3 -332 -380 -387 -390		
30	-291 21 -320 20 -241 -300 -310 -320			-290 1			30
	-286 20 -329 15 -248 -290 -300 -322	-270 13 -289 24 -238 -270 -280 -285		-305 5 -310 2 -300 -305 -308 -310		-380 1	
20	-282 13 -300 5 -262 -280 -294 -299	-284 10 -300 11 -270 -280 -294 -300	-305 22 -359 12 -280 -300 -322 -353	-350 50 -400 2 -302 -350 -384 -398		-372 28 -428 28 -321 -370 -400 -419	20
		-308 8 -329 14 -300 -310 -310 -325	-310 15 -330 6 -283 -310 -322 -329	-390 1	-333 5 -340 3 -330 -330 -337 -340	-320 19 -350 6 -292 -320 -334 -348	
10		-316 9 -330 10 -302 -315 -326 -330	-315 13 -330 6 -300 -315 -330 -330	-341 26 -380 8 -310 -335 -376 -380	-380 1	-302 21 -330 6 -264 -305 -314 -328	10
		-334 16 -369 9 -312 -330 -340 -365	-324 7 -330 10 -312 -325 -330 -330			-283 33 -330 4 -242 -280 -311 -328	
0		-375 5 -380 2 -370 -375 -378 -380	-334 17 -370 11 -312 -330 -348 -368			-250 1	0
		-357 19 -370 3 -332 -370 -370 -370	-329 23 -369 11 -284 -330 -344 -366				
10			-341 16 -370 10 -330 -330 -361 -370	-343 8 -350 4 -331 -345 -350 -350			10
			-345 15 -370 6 -330 -340 -362 -369	-333 5 -340 3 -330 -330 -337 -340	-320 1	-310 20 -330 2 -291 -310 -324 -329	
20			-344 23 -380 7 -312 -340 -370 -379	-345 15 -360 2 -331 -345 -355 -359	-300 1	-320 36 -370 3 -290 -300 -348 -367	20
			-345 17 -370 4 -330 -340 -360 -369	-342 23 -370 9 -310 -340 -367 -370	-300 1		
30			-330 1	-384 34 -458 16 -333 -385 -416 -448	-370 1		30
			-397 37 -440 3 -352 -400 -427 -438	-450 36 -500 16 -375 -455 -486 -497	-455 38 -510 12 -392 -455 -487 -510		
40 S				-471 32 -519 14 -405 -480 -499 -515	-495 22 -520 4 -462 -500 -510 -519		40 S

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

AUGUST  
FL 310

LAT

70 N

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

AUGUST

FL 330

LAT.

70 N						70 N
60						60
				-500	1	-487 12 -500 3 -471 -490 -497 -500
50				-525 5 -530 2 -520 -525 -528 -530		50
				-475 48 -530 4 -412 -480 -520 -529	-450	1
40	-386 52 -479 7 -321 -370 -422 -473		-410	1	-459 36 -509 7 -395 -470 -481 -506	
	-349 25 -418 28 -315 -350 -367 -404		-374 23 -439 21 -334 -380 -380 -432		-388 27 -439 5 -370 -370 -408 -436	
30	-341 25 -452 30 -320 -340 -350 -408		-375 14 -400 10 -360 -370 -390 -398			
	-340 18 -370 13 -310 -340 -360 -368	-322 12 -340 25 -295 -320 -330 -340		-365 17 -409 11 -342 -360 -370 -402		-444 27 -480 5 -403 -440 -467 -478
20	-338 11 -350 4 -321 -340 -345 -349	-341 24 -442 29 -310 -340 -350 -400	-360 29 -429 16 -313 -360 -382 -424	-367 28 -410 6 -340 -355 -402 -409	-450 7 -460 4 -441 -450 -455 -459	-421 29 -478 34 -363 -420 -450 -467
		-344 14 -360 17 -310 -350 -354 -360	-352 16 -370 12 -322 -355 -370 -370	-370	1	-413 26 -450 9 -380 -410 -447 -450
10		-363 8 -380 9 -352 -360 -370 -378	-364 18 -390 12 -332 -365 -382 -390	-379 3 -380 7 -371 -380 -380 -380		-370
		-375 15 -400 4 -361 -370 -386 -398	-370 12 -390 7 -351 -370 -380 -389	-385 5 -390 4 -380 -385 -390 -390		-320
0		-392 7 -400 5 -381 -390 -400 -400	-380 13 -400 9 -360 -380 -390 -398	-393 4 -400 4 -390 -390 -395 -399		-280
		-386 10 -400 5 -371 -390 -394 -399	-380 15 -400 18 -353 -385 -390 -400	-395 5 -400 4 -390 -395 -400 -400		
10			-379 15 -409 25 -355 -380 -390 -405	-397 17 -420 3 -380 -390 -410 -419		-350
			-378 14 -409 23 -354 -380 -390 -406	-370 10 -380 2 -360 -370 -377 -380	-365 25 -390 2 -341 -365 -382 -389	-369 28 -400 7 -324 -370 -400 -400
20			-383 15 -410 16 -360 -380 -400 -407	-380 15 -400 12 -360 -375 -400 -400	-374 23 -410 5 -342 -380 -391 -408	-361 27 -400 7 -324 -350 -400 -400
			-390 10 -410 8 -380 -390 -399 -409	-401 28 -459 14 -363 -390 -429 -455	-386 29 -439 14 -343 -385 -419 -435	
30				-442 49 -519 12 -364 -455 -490 -513	-433 42 -537 19 -364 -430 -470 -522	-350
			-470 33 -520 4 -440 -460 -501 -518	-480 40 -569 21 -410 -480 -508 -566	-481 44 -559 21 -394 -490 -518 -556	
40 S				-495 40 -578 17 -423 -500 -524 -567	-465 63 -578 14 -390 -440 -539 -570	
	30E	60E	90E	120E	150E	180W

LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N				-558 4 -560 5 -551 -560 -560 -560	-528 25 -560 5 -492 -540 -547 -558		-543 23 -560 10 -494 -555 -560 -560	70 N
			-440 24 -470 3 -411 -440 -460 -469		-540 1		-465 48 -539 4 -412 -455 -506 -536	
60		-500 37 -550 3 -461 -490 -531 -548	-470 1		-533 15 -550 4 -511 -535 -545 -549	-560 1	-509 32 -560 13 -462 -500 -550 -558	60
		-523 26 -560 3 -500 -510 -544 -558	-570 1	-479 49 -550 15 -413 -490 -530 -550	-495 44 -579 23 -434 -490 -550 -571	-503 43 -569 11 -424 -490 -544 -566	-496 46 -578 55 -411 -490 -550 -570	
50		-468 37 -510 5 -412 -490 -497 -508	-459 55 -569 9 -393 -430 -510 -560	-461 51 -559 14 -383 -450 -500 -552	-468 26 -500 5 -432 -470 -494 -499	-486 26 -540 21 -448 -480 -516 -540	-471 42 -568 59 -390 -470 -510 -557	50
		-428 30 -480 19 -374 -420 -461 -480	-450 47 -579 45 -379 -440 -500 -571	-490 1		-456 41 -566 25 -368 -460 -482 -541	-444 46 -577 105 -333 -440 -484 -568	
40	-431 33 -508 27 -380 -430 -468 -494	-405 30 -460 17 -363 -400 -440 -457	-440 1			-414 51 -489 12 -342 -425 -462 -486	-392 44 -503 111 -320 -380 -440 -480	40
	-416 40 -500 45 -330 -420 -460 -500	-414 29 -479 12 -372 -410 -440 -471				-340 1	-388 47 -500 98 -320 -390 -440 -481	
30	-438 27 -480 31 -386 -450 -460 -480	-417 31 -470 7 -381 -420 -451 -468	-490 1				-384 56 -487 93 -308 -370 -453 -480	30
	-423 17 -450 8 -401 -420 -448 -450	-405 29 -450 4 -380 -395 -431 -448	-490 10 -500 2 -480 -490 -497 -500				-386 48 -494 107 -311 -380 -450 -478	
20		-407 31 -450 3 -380 -390 -431 -448	-475 5 -480 2 -470 -475 -478 -480				-370 41 -479 46 -318 -360 -408 -471	20
			-424 28 -470 7 -400 -410 -460 -469	-470 1			-381 32 -470 37 -337 -380 -400 -470	
10			-420 22 -450 3 -400 -410 -437 -448	-470 1			-384 32 -469 20 -331 -380 -400 -462	10
			-425 25 -450 4 -400 -425 -450 -450	-460 1			-391 34 -459 24 -317 -390 -400 -455	
0			-430 22 -450 3 -402 -440 -447 -450	-460 1			-390 24 -459 31 -356 -390 -400 -454	0
	-385 5 -390 2 -360 -385 -388 -390						-380 16 -419 31 -350 -380 -390 -414	
10	-405 5 -410 2 -400 -405 -408 -410						-377 20 -410 36 -334 -380 -394 -410	10
				-440 1			-379 22 -436 41 -336 -380 -400 -416	
20							-393 26 -458 36 -347 -390 -420 -446	20
							-434 47 -538 32 -350 -435 -471 -528	
30				-540 1			-481 42 -569 47 -390 -480 -520 -561	30
							-482 54 -580 31 -390 -490 -532 -580	40 S

40S

285

150W 120W 90W 60W 30W 0 30E

LONGITUDE

## APPENDIX C

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 350

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 350

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-540	1	-503	95	-629	3	-590	1	-558	32	-600	4	-535	25	-560	2	-540	61	-629	11
	-540		-403	-480	-582	-624			-513	-560	-581	-598	-511	-535	-552	-559	-416	-560	-594	-624
60	-545	5	-550	2	-521	42	-570	13	-570	1	-564	5	-570	5	-560	5	-536	38	-570	21
	-540	-545	-548	-550	-460	-540	-561	-570			-560	-560	-570	-570			-460	-550	-570	-570
50	-537	12	-550	3	-524	41	-580	13	-513	38	-570	4	-552	67	-610	5	-547	48	-619	39
	-521	-540	-547	-550	-460	-530	-571	-580	-471	-505	-546	-567	-446	-590	-610	-610	-472	-565	-585	-616
40	-520	18	-540	5	-521	30	-579	7	-540	21	-560	9	-523	41	-588	26	-528	51	-610	38
	-492	-530	-534	-539	-490	-520	-542	-575	-502	-550	-560	-560	-440	-540	-560	-580	-440	-540	-580	-610
30	-508	22	-540	24	-483	24	-530	39	-505	39	-580	24	-518	43	-616	29	-551	39	-620	10
	-465	-510	-530	-540	-440	-480	-509	-530	-439	-510	-543	-580	-451	-510	-570	-592	-526	22	-569	12
20	-498	27	-563	74	-469	24	-519	33	-476	10	-490	5	-480	-480	-480	-480	-490	-530	-540	-563
	-450	-500	-530	-540	-420	-470	-490	-514	-461	-480	-484	-489					-410	29	-459	4
10	-476	29	-530	99	-445	33	-528	12									-390	-395	-431	-456
	-410	-480	-500	-520	-400	-440	-462	-517									-447	47	-539	15
0	-476	21	-528	77	-468	27	-510	6									-370	-430	-500	-534
	-440	-480	-498	-515	-441	-455	-502	-509									-410	29	-459	4
10 S	-462	19	-509	27	-460	31	-520	9									-390	-395	-431	-456
	-435	-460	-460	-505	-432	-440	-499	-518												
20	-452	9	-470	11	-467	28	-510	7									-452	37	-530	137
	-440	-450	-460	-468	-441	-450	-510	-510									-380	-460	-482	-523
30	-458	10	-470	5					-469	23	-520	15	-520	1			-436	34	-510	55
	-450	-450	-470	-470					-450	-460	-493	-520					-380	-440	-460	-509
40	-455	11	-470	4					-485	24	-520	6	-515	5	-520	2	-438	32	-520	59
	-441	-455	-465	-469					-460	-480	-512	-519	-510	-515	-518	-520	-382	-430	-460	-520
50	-450	8	-480	3					-500	28	-520	3	-503	25	-520	4	-443	33	-520	41
	-440	-450	-457	-460					-462	-520	-520	-520	-463	-515	-520	-520	-360	-440	-466	-520
60	-437	12	-450	3					-493	33	-530	4	-467	24	-500	3	-437	38	-520	43
	-421	-440	-447	-450					-460	-490	-525	-529	-450	-450	-484	-498	-367	-440	-460	-520
70	-440	-440	-440	2					-490	30	-520	2	-478	33	-530	6	-433	34	-529	50
	-440	-440	-440	-440					-461	-490	-510	-519	-450	-460	-522	-529	-350	-430	-450	-521
80	-467	5	-470	3									-490	29	-530	6	-434	33	-530	54
	-460	-470	-470	-470									-461	-475	-530	-530	-370	-440	-460	-527
90	-460	1											-494	27	-540	5	-439	30	-536	50
													-470	-480	-521	-538	-390	-430	-470	-511
100													-530	1			-436	34	-524	49
																	-380	-430	-470	-492
110																	-443	38	-518	31
																	-380	-440	-490	-508
120																	-467	44	-560	39
																	-388	-490	-539	-560
130																	-520	56	-589	34
																	-406	-535	-570	-583

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 370

LAT.

70 N					-585 5 -590 2 -580 -585 -588 -590	70 N
					-557 22 -590 14 -515 -555 -580 -587	
60					-446 47 -529 5 -392 -440 -479 -524	60
					-490 52 -579 10 -432 -470 -560 -576	
					-483 45 -550 15 -413 -500 -520 -547	
50					-499 44 -569 22 -424 -500 -550 -562	50
					-509 33 -569 31 -442 -510 -540 -564	
					-531 45 -590 23 -444 -540 -580 -590	
					-507 28 -586 43 -457 -500 -533 -565	
40	-465 65 -530 2 -403 -465 -509 -527		-486 15 -510 8 -461 -490 -499 -509		-521 37 -570 9 -470 -520 -567 -570	40
	-427 36 -489 6 -381 -430 -450 -485		-486 16 -510 26 -455 -480 -500 -510	-506 30 -559 19 -460 -520 -530 -556	-535 12 -550 11 -506 -540 -540 -548	
	-471 58 -560 8 -394 -470 -543 -559		-459 17 -480 8 -431 -460 -479 -480	-527 9 -540 3 -520 -520 -534 -539		
30	-430 8 -440 3 -420 -430 -437 -440	-465 60 -559 10 -382 -465 -526 -555		-457 17 -480 3 -440 -450 -470 -479		-511 17 -540 15 -483 -510 -528 -540
		-478 48 -540 5 -422 -450 -534 -539	-458 21 -500 13 -422 -460 -472 -498	-523 52 -560 3 -454 -560 -580 -560		-503 21 -548 56 -461 -500 -520 -540
20		-466 9 -480 8 -460 -460 -479 -480	-465 17 -490 13 -432 -470 -480 -488	-535 39 -570 4 -474 -550 -565 -569	-510 1	-491 28 -530 11 -442 -490 -514 -528
		-470 1	-471 19 -490 12 -440 -480 -490 -490	-504 19 -540 5 -490 -500 -514 -537		-465 20 -500 12 -440 -460 -485 -500
10		-480 1	-483 14 -500 8 -454 -485 -490 -499			-473 30 -519 20 -430 -470 -510 -516
			-484 8 -500 5 -480 -480 -487 -498			-482 31 -519 23 -424 -490 -510 -516
0			-480 1			-475 32 -510 22 -430 -490 -510 -510
				-500 1	-510 1	-475 31 -519 21 -424 -480 -508 -516
10				-476 16 -500 5 -460 -470 -494 -499	-513 5 -520 3 -510 -510 -517 -520	-481 30 -520 12 -432 -490 -510 -518
				-466 19 -500 8 -434 -460 -480 -497	-510 2 -510 -510 -510 -510	-483 28 -520 9 -435 -480 -514 -520
20				-486 18 -510 9 -452 -490 -500 -508	-500 1	-510 29 -550 6 -471 -510 -542 -549
				-489 19 -510 16 -446 -500 -506 -510	-510 2 -510 -510 -510 -510	-550 8 -560 3 -540 -550 -557 -560
30			-480 1	-502 44 -599 33 -430 -490 -558 -594	-518 28 -540 4 -474 -530 -535 -539	-485 23 -520 4 -481 -480 -506 -518
				-524 46 -600 18 -457 -505 -583 -600	-506 74 -629 7 -400 -470 -582 -624	
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-545 28 -590 6 -511 -540 -574 -588	-535 25 -560 2 -511 -535 -552 -559		-505 45 -550 4 -460 -505 -550 -550	-570 10 -580 2 -560 -570 -577 -580		-542 40 -590 16 -460 -550 -580 -590	70 N
	-562 34 -610 12 -504 -570 -592 -608	-538 58 -600 7 -451 -570 -590 -599	-400 1	-510 48 -560 4 -443 -520 -555 -559	-534 55 -590 5 -453 -560 -584 -589		-544 48 -609 43 -434 -560 -590 -602	
60	-548 49 -600 6 -466 -555 -600 -600	-535 41 -599 6 -490 -535 -568 -596	-535 38 -590 4 -491 -530 -571 -588	-520 80 -639 4 -432 -505 -592 -634	-530 42 -570 5 -472 -550 -570 -570	-540 37 -580 4 -484 -550 -566 -578	-515 59 -635 44 -416 -515 -571 -606	60
	-482 56 -570 9 -420 -460 -559 -570	-555 25 -599 10 -507 -555 -576 -596	-562 29 -600 10 -514 -565 -596 -600	-541 41 -609 23 -449 -540 -585 -601	-565 53 -639 31 -460 -570 -622 -634	-545 30 -580 6 -502 -550 -572 -579	-532 55 -636 126 -420 -540 -590 -630	
50	-519 42 -589 24 -438 -525 -553 -585	-538 22 -580 18 -500 -540 -553 -580	-559 45 -630 15 -490 -570 -608 -627	-548 47 -648 34 -486 -530 -607 -637	-606 47 -660 7 -532 -620 -660 -660	-563 40 -658 13 -510 -560 -592 -648	-538 47 -660 165 -450 -540 -580 -644	50
	-533 30 -590 16 -483 -530 -556 -587	-517 23 -568 67 -480 -510 -540 -560	-531 32 -610 53 -480 -530 -567 -609	-520 27 -560 4 -491 -515 -546 -558		-563 55 -649 12 -458 -565 -615 -646	-521 34 -637 214 -460 -520 -550 -605	
40	-504 23 -539 37 -457 -510 -530 -533	-507 21 -558 65 -470 -510 -530 -547	-523 29 -589 8 -491 -520 -530 -582			-545 25 -570 2 -521 -545 -562 -569	-503 30 -580 174 -440 -510 -530 -555	40
	-507 29 -550 125 -430 -510 -530 -550	-500 26 -520 6 -453 -515 -520 -520	-545 35 -580 4 -510 -545 -580 -580				-504 34 -580 154 -430 -510 -530 -550	
30	-510 26 -550 106 -450 -510 -530 -550	-490 20 -510 2 -471 -490 -504 -509	-580 1				-504 34 -572 140 -416 -510 -530 -550	30
	-500 23 -540 31 -460 -500 -520 -540	-517 25 -550 3 -491 -510 -537 -548	-580 -580 -580 2 -580 -580 -580 -580				-498 31 -580 113 -432 -500 -521 -560	
20	-493 11 -510 6 -480 -495 -502 -509	-550 -550 -550 2 -550 -550 -550 -550	-580 -580 -580 2 -580 -580 -580 -580				-490 37 -580 47 -439 -480 -526 -580	20
	-503 11 -510 9 -482 -510 -510 -510	-520 1	-523 24 -579 9 -502 -510 -542 -575	-570 1			-491 31 -579 50 -440 -490 -510 -570	
10	-504 5 -510 7 -500 -500 -510 -510		-530 20 -550 2 -511 -530 -544 -549				-484 28 -547 38 -430 -490 -510 -528	10
	-502 4 -510 5 -500 -500 -504 -509			-580 1			-488 31 -574 34 -427 -500 -510 -540	
0	-496 5 -500 5 -490 -500 -500 -500		-523 26 -560 3 -500 -510 -544 -558	-580 -580 -580 2 -580 -580 -580 -580			-489 39 -580 33 -430 -500 -510 -580	0
	-500 8 -510 3 -490 -500 -507 -510		-530 30 -560 2 -501 -530 -550 -559	-544 33 -580 5 -501 -560 -574 -579			-493 39 -579 33 -426 -500 -510 -574	
10	-510 8 -520 3 -500 -510 -517 -520			-557 30 -580 6 -511 -575 -580 -580			-502 39 -580 29 -436 -510 -520 -580	10
	-510 1			-565 36 -600 6 -511 -585 -592 -599			-500 48 -599 26 -430 -500 -520 -595	
20				-567 46 -630 3 -521 -550 -604 -627			-507 39 -626 19 -454 -500 -541 -601	20
				-500 20 -520 2 -481 -500 -514 -519			-500 27 -559 23 -449 -500 -515 -556	
30				-533 26 -570 3 -510 -520 -554 -568			-504 42 -599 45 -430 -490 -540 -591	30
							-519 56 -628 25 -419 -500 -582 -616	
40 S								40 S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 390

LAT.

70 N						-560 -70 -630 -2 -493 -560 -608 -627	70 N
60						-539 64 -640 15 -446 -530 -618 -637	60
					-474 52 -569 8 -413 -455 -526 -564	-511 70 -620 12 -414 -505 -610 -618	
50					-506 47 -570 14 -413 -505 -550 -567	-533 62 -630 19 -434 -550 -610 -630	50
					-553 43 -620 24 -473 -565 -590 -620	-568 51 -630 37 -457 -590 -620 -630	
40	-550 1			-540 -540 -540 -540 2 -540 -540 -540 -540	-528 36 -579 20 -458 -530 -560 -576	-552 39 -610 13 -485 -550 -600 -608	40
	-540 8 -550 3 -530 -540 -547 -550			-537 22 -580 12 -510 -535 -555 -578	-546 23 -589 26 -490 -540 -570 -585	-564 17 -590 8 -541 -560 -586 -590	
30				-534 25 -560 9 -490 -540 -557 -560	-547 23 -570 11 -500 -560 -560 -568		30
	-480 1	-575 5 -580 2 -570 -575 -578 -580		-531 11 -550 16 -506 -530 -540 -547		-551 14 -580 7 -540 -550 -561 -578	
20	-505 5 -510 2 -500 -505 -508 -510	-533 33 -580 3 -510 -510 -558 -577	-510 12 -520 4 -491 -515 -520 -520	-570 51 -630 4 -511 -570 -620 -629		-549 22 -580 11 -510 -550 -570 -578	20
		-510 1	-523 8 -530 4 -511 -525 -530 -530	-620 -620 -620 -620 2 -620 -620 -620 -620		-539 43 -570 8 -461 -560 -570 -570	
10			-536 12 -550 7 -512 -540 -540 -549			-544 40 -570 8 -471 -565 -570 -570	10
			-545 5 -550 4 -540 -545 -550 -550			-553 30 -570 7 -490 -560 -570 -570	
0			-560 19 -590 4 -541 -555 -576 -588			-552 7 -560 5 -541 -550 -560 -560	0
						-560 5 -570 8 -551 -560 -560 -569	
10						-554 21 -570 9 -508 -560 -570 -570	10
				-530 1		-549 25 -570 7 -497 -560 -560 -569	
20				-530 -530 -530 -530 2 -530 -530 -530 -530		-567 5 -570 6 -560 -570 -570 -570	20
				-525 5 -530 2 -520 -525 -528 -530		-558 18 -580 4 -540 -555 -575 -579	
30				-530 1		-543 16 -570 4 -530 -535 -558 -568	30
		-540 1	-540 1	-523 47 -590 4 -471 -515 -566 -587		-517 25 -550 3 -491 -510 -537 -548	
40 S				-570 1	-536 66 -630 14 -435 -540 -599 -630		40 S
30E	60E	90E	120E	150E	180W	150W	

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 390

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-550 63 -640 12 -464 -560 -622 -638	-450 1	-496 71 -609 5 -414 -460 -565 -604	-485 55 -540 2 -432 -485 -522 -538			-528 71 -639 22 -418 -515 -616 -636	70 N
60	-554 58 -630 13 -462 -560 -620 -628	-518 53 -590 12 -444 -505 -582 -590	-490 20 -510 2 -471 -490 -504 -509	-470 1	-540 62 -610 3 -464 -550 -591 -608		-534 61 -639 46 -440 -525 -608 -631	60
50	-530 33 -589 5 -500 -530 -552 -585	-515 37 -579 11 -454 -520 -548 -576	-553 68 -620 4 -472 -560 -620 -620	-497 42 -559 6 -441 -505 -528 -556	-513 54 -629 7 -471 -490 -553 -620	-557 9 -570 3 -550 -550 -564 -569	-512 56 -628 56 -412 -505 -570 -620	50
40	-562 70 -620 5 -440 -600 -614 -619	-570 29 -600 5 -531 -590 -594 -599	-523 24 -550 4 -491 -525 -545 -549	-560 10 -570 2 -550 -560 -567 -570	-586 33 -620 8 -520 -590 -618 -620	-543 68 -610 3 -455 -570 -597 -608	-540 58 -630 60 -430 -550 -600 -628	40
30	-565 61 -640 17 -443 -580 -620 -637	-542 30 -589 18 -490 -545 -570 -587	-543 9 -560 6 -531 -540 -552 -559	-558 47 -610 5 -478 -570 -584 -607	-806 19 -630 7 -580 -610 -630 -630	-584 23 -610 5 -552 -580 -610 -610	-562 47 -636 119 -450 -570 -610 -630	30
20	-562 34 -619 9 -500 -560 -587 -615	-550 28 -590 40 -489 -555 -580 -590	-560 26 -618 38 -510 -560 -581 -605	-570 8 -580 3 -560 -570 -577 -580		-568 40 -600 4 -505 -585 -595 -599	-551 32 -620 130 -470 -560 -580 -604	20
10	-548 29 -590 11 -494 -550 -576 -590	-547 18 -590 53 -520 -540 -567 -590	-548 23 -580 6 -520 -550 -572 -579				-547 22 -590 119 -497 -540 -570 -590	10
0	-544 26 -589 24 -500 -550 -570 -585	-550 15 -580 7 -531 -550 -561 -576					-544 25 -588 51 -490 -550 -560 -580	0
10 S	-538 25 -589 17 -493 -540 -554 -584	-550 8 -560 3 -540 -550 -557 -560					-539 22 -589 46 -489 -540 -558 -581	10 S
20 S	-540 21 -560 5 -511 -550 -560 -560	-550 1					-541 33 -628 30 -496 -540 -570 -618	20 S
30 S							-543 45 -620 15 -483 -550 -570 -620	30 S
40 S	-580						-543 31 -580 16 -473 -545 -570 -577	40 S
	-580		-570 1				-554 24 -580 13 -494 -560 -570 -578	
			-555 5 -560 2 -550 -555 -558 -560				-555 13 -589 11 -540 -550 -560 -584	
			-550 1				-559 6 -570 9 -550 -560 -560 -568	
							-554 21 -570 9 -508 -560 -570 -570	
							-546 24 -570 8 -496 -555 -560 -569	
							-558 16 -570 8 -530 -565 -570 -570	
							-547 21 -580 6 -521 -540 -572 -579	
							-540 15 -570 5 -530 -530 -551 -568	
							-524 35 -589 9 -473 -540 -547 -584	
							-539 64 -630 15 -436 -570 -598 -630	

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST

FL 410

LAT.

[illegible]



MEAN LAT

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

70 N

[illegible]

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 430

TABULATED TEMPERATURES = °C \* 10

70 N



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

AUGUST  
FL 430

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N										70 N
60										60
50										50
40										40
30										30
20										20
10										10
0										0
10										10
20										20
30										30
40 S										40 S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER

FL 270

LAT.

70 N							70 N
60							60
50							50
40							40
	-190	1			-256 20 -309 21 -230 -250 -270 -302		
30	-275 75 -350 2 -203 -275 -326 -347				-220 1		
	-245 15 -260 2 -231 -245 -255 -259	-210 1					
20	-220 50 -270 2 -172 -220 -254 -268	-250 23 -270 4 -213 -260 -265 -269	-225 17 -250 4 -210 -220 -240 -249			-256 25 -290 23 -210 -260 -280 -290	
		-213 26 -250 3 -190 -200 -234 -248	-200 1			-250 15 -270 8 -223 -255 -260 -269	
10			-210 10 -220 2 -200 -210 -217 -220	-220 1		-260 1	
0			-270 1				
10							
20						-248 27 -290 4 -221 -240 -271 -288	
						-295 25 -320 2 -271 -295 -312 -319	
30							
			-367 12 -380 3 -351 -370 -377 -380	-380 44 -449 4 -332 -370 -416 -446	-430 32 -469 10 -359 -435 -450 -466		
40 S				-428 15 -450 4 -411 -425 -440 -449			
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

SEPTEMBER  
FL 270

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER

FL 290

LAT.

70 N						70 N
60						60
50						50
40	-375 5 -380 2 -370 -375 -378 -380					40
30	-326 45 -380 5 -255 -330 -367 -378			-294 26 -339 19 -250 -290 -321 -336		30
20	-275 5 -280 4 -270 -275 -280 -280	-270 1		-260 1		20
10	-285 5 -290 2 -280 -285 -288 -290	-262 22 -280 5 -231 -260 -280 -280			-340 1	10
0	-255 25 -280 4 -230 -255 -280 -280	-243 11 -260 4 -231 -240 -250 -259	-280 17 -300 8 -251 -285 -299 -300		-311 22 -340 14 -268 -320 -330 -340	0
10 S		-262 19 -280 5 -232 -270 -280 -280			-280 20 -310 11 -250 -280 -300 -308	10 S
20 S		-283 4 -290 4 -280 -280 -285 -289	-310 1		-255 5 -260 2 -250 -255 -258 -260	20 S
30 S		-295 5 -300 2 -290 -295 -298 -300				30 S
40 S			-310 1			40 S
50 S			-280 -280 -280 2 -280 -280 -280 -280			50 S
60 S			-280 -280 -280 2 -280 -280 -280 -280			60 S
70 S			-270 1	-260 1		70 S
80 S					-283 14 -300 7 -261 -280 -300 -300	80 S
90 S			-290 1		-305 11 -320 4 -291 -305 -315 -319	90 S
100 S			-355 25 -380 2 -331 -355 -372 -379		-360 56 -459 6 -284 -355 -404 -453	100 S
110 S			-440 1	-440 1	-404 37 -459 16 -333 -405 -440 -454	110 S
120 S				-440 31 -470 4 -393 -450 -465 -469	-470 14 -480 3 -451 -480 -480 -480	120 S
130 S						130 S
140 S						140 S
150 S						150 S
160 S						160 S
170 S						170 S
180 S						180 S
190 S						190 S
200 S						200 S
210 S						210 S
220 S						220 S
230 S						230 S
240 S						240 S
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260 S						260 S
270 S						270 S
280 S						280 S
290 S						290 S
300 S						300 S
310 S						310 S
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330 S						330 S
340 S						340 S
350 S						350 S
360 S						360 S
370 S						370 S
380 S						380 S
390 S						390 S
400 S						400 S
410 S						410 S
420 S						420 S
430 S						430 S
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930 S						930 S
940 S						940 S
950 S						950 S
960 S						960 S
970 S						970 S
980 S						980 S
990 S						990 S
1000 S						1000 S

LONGITUDE

SEPTEMBER  
FL 290

	MEAN	LAT
1960-1969	78.0	10.0
1970-1979	78.0	10.0
1980-1989	78.0	10.0
1990-1999	78.0	10.0
2000-2009	78.0	10.0
2010-2019	78.0	10.0
2020-2029	78.0	10.0
2030-2039	78.0	10.0
2040-2049	78.0	10.0
2050-2059	78.0	10.0
2060-2069	78.0	10.0
2070-2079	78.0	10.0
2080-2089	78.0	10.0
2090-2099	78.0	10.0
2100-2109	78.0	10.0
2110-2119	78.0	10.0
2120-2129	78.0	10.0
2130-2139	78.0	10.0
2140-2149	78.0	10.0
2150-2159	78.0	10.0
2160-2169	78.0	10.0
2170-2179	78.0	10.0
2180-2189	78.0	10.0
2190-2199	78.0	10.0
2200-2209	78.0	10.0
2210-2219	78.0	10.0
2220-2229	78.0	10.0
2230-2239	78.0	10.0
2240-2249	78.0	10.0
2250-2259	78.0	10.0
2260-2269	78.0	10.0
2270-2279	78.0	10.0
2280-2289	78.0	10.0
2290-2299	78.0	10.0
2300-2309	78.0	10.0
2310-2319	78.0	10.0
2320-2329	78.0	10.0
2330-2339	78.0	10.0
2340-2349	78.0	10.0
2350-2359	78.0	10.0
2360-2369	78.0	10.0
2370-2379	78.0	10.0
2380-2389	78.0	10.0
2390-2399	78.0	10.0
2400-2409	78.0	10.0
2410-2419	78.0	10.0
2420-2429	78.0	10.0
2430-2439	78.0	10.0
2440-2449	78.0	10.0
2450-2459	78.0	10.0
2460-2469	78.0	10.0
2470-2479	78.0	10.0
2480-2489	78.0	10.0
2490-2499	78.0	10.0
2500-2509	78.0	10.0
2510-2519	78.0	10.0
2520-2529	78.0	10.0
2530-2539	78.0	10.0
2540-2549	78.0	10.0
2550-2559	78.0	10.0
2560-2569	78.0	10.0
2570-2579	78.0	10.0
2580-2589	78.0	10.0
2590-2599	78.0	10.0
2600-2609	78.0	10.0
2610-2619	78.0	10.0
2620-2629	78.0	10.0
2630-2639	78.0	10.0
2640-2649	78.0	10.0
2650-2659	78.0	10.0
2660-2669	78.0	10.0
2670-2679	78.0	10.0
2680-2689	78.0	10.0
2690-2699	78.0	10.0
2700-2709	78.0	10.0
2710-2719	78.0	10.0
2720-2729	78.0	10.0
2730-2739	78.0	10.0
2740-2749	78.0	10.0
2750-2759	78.0	10.0
2760-2769	78.0	10.0
2770-2779	78.0	10.0
2780-2789	78.0	10.0
2790-2799	78.0	10.0
2800-2809	78.0	10.0
2810-2819	78.0	10.0
2820-2829	78.0	10.0
2830-2839	78.0	10.0
2840-2849	78.0	10.0
2850-2859	78.0	10.0
2860-2869	78.0	10.0
2870-2879	78.0	10.0
2880-2889	78.0	10.0
2890-2899	78.0	10.0
2900-2909	78.0	10.0
2910-2919	78.0	10.0
2920-2929	78.0	10.0
2930-2939	78.0	10.0
2940-2949	78.0	10.0
2950-2959	78.0	10.0
2960-2969	78.0	10.0
2970-2979	78.0	10.0
2980-2989	78.0	10.0
2990-2999	78.0	10.0
3000-3009	78.0	10.0
3010-3019	78.0	10.0
3020-3029	78.0	1

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

60

50

40

30

20

10

0

10

20

30

40 S

**70 N**

60

50

40

30

20

10

0

10

20

30

405

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

[illegible]

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 310

	MEAN	LAT
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00
9	0.00	0.00
10	0.00	0.00
11	0.00	0.00
12	0.00	0.00
13	0.00	0.00
14	0.00	0.00
15	0.00	0.00
16	0.00	0.00
17	0.00	0.00
18	0.00	0.00
19	0.00	0.00
20	0.00	0.00
21	0.00	0.00
22	0.00	0.00
23	0.00	0.00
24	0.00	0.00
25	0.00	0.00
26	0.00	0.00
27	0.00	0.00
28	0.00	0.00
29	0.00	0.00
30	0.00	0.00
31	0.00	0.00
32	0.00	0.00
33	0.00	0.00
34	0.00	0.00
35	0.00	0.00
36	0.00	0.00
37	0.00	0.00
38	0.00	0.00
39	0.00	0.00
40	0.00	0.00
41	0.00	0.00
42	0.00	0.00
43	0.00	0.00
44	0.00	0.00
45	0.00	0.00
46	0.00	0.00
47	0.00	0.00
48	0.00	0.00
49	0.00	0.00
50	0.00	0.00
51	0.00	0.00
52	0.00	0.00
53	0.00	0.00
54	0.00	0.00
55	0.00	0.00
56	0.00	0.00
57	0.00	0.00
58	0.00	0.00
59	0.00	0.00
60	0.00	0.00
61	0.00	0.00
62	0.00	0.00
63	0.00	0.00
64	0.00	0.00
65	0.00	0.00
66	0.00	0.00
67	0.00	0.00
68	0.00	0.00
69	0.00	0.00
70	0.00	0.00
71	0.00	0.00
72	0.00	0.00
73	0.00	0.00
74	0.00	0.00
75	0.00	0.00
76	0.00	0.00
77	0.00	0.00
78	0.00	0.00
79	0.00	0.00
80	0.00	0.00
81	0.00	0.00
82	0.00	0.00
83	0.00	0.00
84	0.00	0.00
85	0.00	0.00
86	0.00	0.00
87	0.00	0.00
88	0.00	0.00
89	0.00	0.00
90	0.00	0.00
91	0.00	0.00
92	0.00	0.00
93	0.00	0.00
94	0.00	0.00
95	0.00	0.00
96	0.00	0.00
97	0.00	0.00
98	0.00	0.00
99	0.00	0.00
100	0.00	0.00

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

70 N					-520	1		-520	1	70 N
					-468 43 -510 4 -404 -480 -505 -509	-523 18 -550 10 -492 -530 -540 -548	-510 28 -550 3 -490 -490 -531 -548	-506 36 -550 18 -420 -510 -540 -550		
60					-508 66 -619 12 -404 -530 -560 -613	-487 43 -560 18 -423 -480 -533 -560	-482 33 -530 6 -441 -475 -522 -529	-493 52 -617 36 -414 -485 -540 -599		60
					-457 58 -550 24 -375 -465 -520 -550	-443 54 -557 51 -320 -440 -490 -540	-437 42 -490 14 -358 -445 -488 -490	-446 54 -557 89 -328 -440 -490 -550		
50	-450 10 -460 2 -440 -450 -457 -460	-410 1	-470 69 -560 5 -384 -440 -547 -558	-430 63 -568 21 -310 -420 -498 -554	-450 46 -529 4 -420 -425 -482 -524	-440 44 -529 6 -401 -420 -474 -523	-439 59 -569 39 -310 -430 -500 -562			50
	-425 5 -430 2 -420 -425 -428 -430	-419 32 -469 16 -363 -420 -450 -464	-407 36 -511 63 -342 -410 -440 -468	-375 11 -390 4 -361 -375 -385 -389	-398 15 -420 4 -381 -395 -410 -419	-434 52 -529 8 -373 -415 -494 -526	-410 36 -527 100 -350 -410 -442 -500			
40	-405 34 -460 25 -340 -400 -442 -460	-387 34 -440 12 -332 -390 -422 -438	-367 34 -400 3 -322 -380 -394 -399			-380 1	-387 39 -460 72 -324 -390 -426 -460			40
	-370 12 -380 4 -351 -375 -380 -380	-382 33 -458 11 -332 -380 -398 -450					-368 31 -457 24 -315 -370 -383 -437			
30							-323 40 -360 6 -254 -345 -352 -359			30
							-352 26 -390 34 -300 -355 -377 -390			
20							-324 23 -350 9 -276 -330 -344 -350			20
			-340 1				-326 12 -340 21 -300 -330 -340 -340			
10			-290 1				-330 13 -350 21 -302 -330 -340 -350			10
							-336 11 -369 18 -323 -330 -340 -363			
0							-341 13 -370 14 -330 -335 -350 -367			0
							-336 8 -350 5 -330 -330 -344 -349			
10							-333 9 -340 3 -321 -340 -340 -340			10
				-390 1			-345 34 -400 8 -294 -335 -386 -399			
20				-380 1			-371 30 -429 9 -330 -370 -394 -425			20
							-408 44 -470 16 -340 -410 -460 -470			
30				-410 1			-457 33 -519 26 -400 -460 -490 -515			30
							-535 5 -540 2 -530 -535 -538 -540			40 S
40 S	150W	120W	90W	60W	30W	0	30E			

301

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER

FL 330

LAT.

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

70 N							70 N
60							60
						-495 5 -500 2 -490 -495 -498 -500	-550 16 -570 3 -531 -550 -564 -569
50						-515 5 -520 2 -510 -515 -518 -520	-475 5 -480 2 -470 -475 -478 -480
						-440 41 -500 10 -372 -440 -486 -498	
40	-440 52 -510 4 -381 -435 -491 -506			-418 23 -440 4 -382 -425 -435 -439	-448 52 -559 16 -380 -435 -508 -554		40
	-398 49 -509 16 -346 -380 -456 -504			-411 26 -449 19 -357 -420 -431 -446	-443 21 -470 3 -421 -440 -460 -469		
30	-355 22 -399 10 -324 -355 -371 -396			-360 16 -410 6 -361 -375 -394 -408			30
	-350 20 -370 2 -331 -350 -364 -369	-356 19 -390 11 -322 -360 -374 -388		-393 11 -410 12 -372 -390 -402 -410		-419 18 -450 9 -400 -410 -440 -448	
20		-342 17 -360 6 -320 -345 -360 -360	-375 11 -390 10 -360 -380 -386 -390	-385 14 -400 6 -362 -385 -400 -400		-413 23 -469 30 -370 -410 -434 -464	20
		-350 16 -370 4 -331 -350 -365 -369	-363 17 -380 3 -341 -370 -377 -380	-370 1		-390 1	
10		-373 23 -410 4 -351 -365 -391 -408	-387 5 -390 3 -380 -390 -390 -390			-395 5 -400 2 -390 -395 -398 -400	10
		-387 12 -400 3 -371 -390 -397 -400	-385 11 -400 4 -371 -385 -395 -399	-380 380 -380 -380 2 -380 -380 -380 -380		-385 5 -390 2 -380 -385 -388 -390	
0		-384 5 -390 5 -380 -380 -390 -390	-388 10 -400 5 -380 -380 -400 -400	-380 380 -380 3 -380 -380 -380 -380		-383 5 -390 3 -380 -380 -387 -390	0
		-382 23 -420 6 -351 -385 -396 -417	-370 10 -380 2 -360 -370 -377 -380	-380 380 -380 2 -380 -380 -380 -380	-380 1	-375 13 -400 12 -352 -375 -382 -398	
10			-385 35 -420 4 -350 -385 -420 -420	-385 5 -390 2 -380 -385 -388 -390	-389 11 -410 7 -371 -390 -391 -408	-383 8 -400 15 -370 -380 -390 -397	10
			-360 22 -390 3 -340 -350 -377 -388	-375 5 -380 2 -370 -375 -378 -380	-381 9 -400 10 -364 -380 -386 -398	-386 8 -400 11 -372 -390 -390 -398	
20			-372 23 -400 6 -341 -375 -392 -399	-383 5 -390 3 -380 -380 -387 -390	-387 14 -410 18 -363 -385 -400 -410		20
			-350 8 -360 3 -340 -350 -357 -360	-390 1	-398 22 -450 17 -370 -390 -414 -447		
30			-433 9 -440 3 -421 -440 -440 -440	-510 1	-422 43 -489 18 -353 -420 -473 -487		30
			-470 37 -510 4 -422 -475 -505 -509	-490 24 -520 3 -461 -490 -510 -519	-474 47 -549 12 -392 -480 -512 -543		
40 S				-478 63 -560 5 -420 -440 -554 -559	-510 45 -570 4 -452 -510 -551 -568		40 S
30E	60E	90E	120E	150E	180W	150W	

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

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10

10

0

0

10

10

20

20

30

30

40 S

405

150W

120W

90W

60W

30W

0

30E

LONGITUDE

303

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 350

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

LAT.		TABULATED TEMPERATURES = °C * 10												LAT.	
70 N		FL 350												70 N	
		MEAN													
		FL 350													
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**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTMBER

FL 370

LAT.

70 N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-540 33 -590 4 -510 -530 -571 -588		-480 1	-492 16 -510 5 -471 -490 -510 -510	-500 20 -520 2 -481 -500 -514 -519		-508 33 -589 12 -472 -510 -527 -581	70 N
	-563 39 -619 18 -483 -575 -600 -617	-539 45 -638 13 -472 -540 -572 -628	-465 5 -470 2 -460 -465 -468 -470	-497 36 -560 10 -445 -485 -538 -560	-520 60 -590 9 -416 -540 -574 -588		-531 51 -637 55 -441 -540 -584 -619	
60	-547 25 -580 3 -521 -540 -567 -578	-537 47 -630 14 -483 -535 -578 -627	-513 29 -550 3 -481 -510 -537 -548	-460 48 -559 6 -420 -445 -488 -551	-526 63 -620 16 -400 -545 -570 -617	-537 53 -600 3 -473 -540 -581 -598	-521 59 -628 65 -406 -520 -580 -620	60
	-574 34 -600 5 -515 -590 -600 -600	-563 41 -620 6 -521 -545 -620 -620	-526 58 -620 17 -443 -510 -604 -620	-516 40 -614 37 -420 -530 -550 -577	-551 57 -668 58 -423 -560 -600 -680	-561 46 -650 14 -490 -560 -590 -647	-536 54 -665 168 -427 -540 -590 -650	
50	-534 45 -610 12 -480 -530 -592 -608	-549 30 -580 9 -481 -560 -567 -578	-543 40 -629 32 -469 -545 -580 -624	-533 39 -609 35 -437 -530 -570 -603	-564 16 -590 9 -540 -570 -577 -588	-560 18 -590 8 -533 -555 -579 -589	-538 38 -625 164 -450 -540 -570 -607	
	-552 29 -609 20 -510 -550 -580 -606	-538 30 -603 77 -470 -540 -570 -580	-540 34 -628 73 -480 -540 -575 -616	-530 8 -540 3 -520 -530 -537 -540	-620 1	-579 35 -630 8 -533 -575 -625 -630	-535 35 -630 246 -470 -540 -570 -620	
40	-533 28 -588 61 -482 -540 -560 -578	-534 28 -580 58 -490 -540 -560 -580	-526 5 -530 8 -520 -530 -530 -530				-524 30 -584 187 -467 -520 -560 -580	
	-526 30 -607 115 -470 -530 -560 -590	-530 25 -560 4 -492 -535 -550 -559	-517 9 -530 3 -510 -510 -524 -529				-524 30 -606 136 -470 -530 -560 -590	
30	-523 24 -587 85 -480 -520 -540 -580						-519 25 -587 117 -480 -520 -540 -580	
	-516 21 -550 11 -474 -520 -534 -548	-480 1					-502 25 -550 64 -445 -500 -529 -550	
20			-540 1				-485 22 -540 30 -448 -480 -500 -540	
	-510 1		-473 33 -520 3 -450 -450 -498 -517				-487 14 -519 33 -450 -490 -499 -514	
10	-510 1		-490 28 -510 3 -452 -510 -510 -510				-492 13 -510 29 -461 -490 -505 -510	
			-485 35 -520 2 -451 -485 -509 -519	-450 1			-491 18 -519 21 -450 -490 -510 -516	
0			-510 1	-480 28 -520 3 -460 -460 -501 -518			-484 19 -520 15 -460 -480 -508 -517	
				-487 24 -520 3 -470 -470 -504 -518			-490 20 -520 11 -454 -500 -510 -518	
10				-470 -470 -470 -470			-496 16 -510 8 -470 -500 -510 -510	
				-455 15 -470 2 -441 -455 -465 -469			-489 22 -510 8 -444 -485 -509 -510	
20				-430 1			-466 34 -519 14 -398 -480 -490 -515	
							-480 19 -520 16 -453 -480 -490 -520	
30							-516 61 -630 15 -420 -500 -586 -630	
							-484 46 -550 5 -423 -470 -531 -548	40 S
40 S	150W	120W	90W	60W	30W	0	30E	

307

LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTMBER

FL 390

LAT.

70 N						-500	1	70 N
						-532	61 -639 27	
60						-445	-520 -598 -635	60
					-494 24 -530 10	-513 42 -599 28		
					-462 -490 -520 -528	-455 -500 -557 -595		
50					-489 37 -559 14	-561 54 -649 19		50
					-433 -485 -528 -555	-460 -550 -611 -646		
					-540 49 -628 21	-560 45 -639 32		
					-446 -540 -590 -618	-482 -555 -610 -634		
40	-580	1			-544 15 -560 5	-560 32 -619 25	-585 32 -640 15	40
					-522 -540 -560 -560	-494 -570 -590 -610	-550 -570 -620 -640	
	-577 5 -580 3				-534 15 -560 5	-576 27 -610 9	-601 8 -610 8	
	-570 -580 -580 -580				-520 -530 -547 -558	-526 -580 -604 -610	-590 -600 -610 -610	
30	-585 5 -590 2				-500 -500 -500 2	-560	1 -590 -590 3	30
	-580 -585 -588 -590				-500 -500 -500 -500		-590 -590 -590 -590	
	-540	1	-585 5 -590 2		-530 31 -560 4	-562 13 -590 13	-580 10 -590 2	
			-580 -585 -588 -590		-491 -535 -560 -560	-542 -560 -571 -588	-570 -580 -587 -590	
20				-537 15 -560 7	-535 11 -560 8		-565 15 -590 6	20
				-512 -540 -550 -559	-521 -530 -540 -557		-542 -565 -574 -588	
				-524 12 -540 5			-570	1
				-510 -530 -534 -539				
10				-537 15 -560 7	-530	1	-565 5 -570 2	10
				-520 -530 -550 -559			-560 -565 -568 -570	
				-545 15 -560 4			-555 5 -560 2	
				-530 -545 -560 -560			-550 -555 -558 -560	
0				-548 11 -560 4			-563 15 -580 4	0
				-531 -550 -555 -559			-541 -565 -575 -579	
							-558 8 -570 4	
							-550 -555 -565 -569	
10							-545 3 -550 2	10
							-540 -545 -548 -550	
20								20
30								30
					-603 17 -620 3	-500 -500 -500 2		
					-581 -610 -617 -620	-500 -500 -500 -500		
40 S					-530	1	-517 12 -530 3	40 S
							-501 -520 -527 -530	
30E	60E	90E	120E	150E	180W	150W		





MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 410

70 N

[illegible]

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 410

MEAN LAT

LAT.   
TABULATED TEMPERATURES = °C \* 10

[illegible]

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

SEPTEMBER  
FL 430

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 270

LAT.

70 N						70 N
60						60
50						50
40						40
	-365 28 -419 6 -340 -355 -388 -416			-319 42 -389 17 -243 -320 -360 -384		
30	-332 24 -379 6 -310 -325 -348 -376			-298 40 -350 5 -242 -300 -337 -348		
	-290 27 -330 4 -261 -285 -316 -328	-271 47 -350 7 -214 -260 -331 -348				
20	-270 10 -280 2 -260 -270 -277 -280		-243 18 -280 9 -222 -240 -262 -278		-275 24 -320 22 -234 -280 -296 -320	
		-233 5 -240 3 -230 -230 -237 -240	-236 10 -250 5 -221 -240 -244 -249		-276 29 -320 5 -242 -260 -307 -318	
10			-213 23 -250 6 -181 -220 -226 -247	-245 5 -250 4 -240 -245 -250 -250	-250 25 -250 2 -250 -250 -250 -250	
0			-235 15 -250 2 -221 -235 -245 -249			
			-230 16 -250 3 -211 -230 -244 -249			
10						
				-200 2 -200 -200 -200 -200		
20					-254 25 -290 8 -221 -250 -280 -289	
					-245 5 -250 2 -240 -245 -248 -250	
					-275 5 -280 2 -270 -275 -278 -280	
30			-357 35 -400 7 -311 -360 -400 -400	-363 44 -420 6 -311 -355 -420 -420	-350 25 -418 16 -320 -345 -372 -408	
				-358 36 -400 6 -303 -360 -400 -400	-382 27 -420 6 -335 -385 -396 -417	
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 270

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

LAT.

TABULATED TEMPERATURES = °C \* 10

**70 N**

60

50

40

30

20

10

0

10

20

30

40 \$

[illegible]

70 N

60

50

40

30

20

10

0

10

20

30

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 290

LAT.

70 N						-570	1	70 N
60								60
50								50
40	-415 34 -460 4 -372 -415 -446 -458							40
30	-428 17 -450 8 -401 -425 -449 -450				-354 35 -419 25 -300 -350 -392 -415			30
20	-382 20 -410 13 -345 -380 -401 -410	-390	1		-334 38 -380 7 -266 -350 -361 -378			20
10	-303 26 -340 4 -271 -300 -326 -338	-363 36 -400 8 -301 -375 -398 -400						10
0	-311 25 -359 7 -274 -310 -322 -355	-284 14 -310 12 -262 -280 -300 -308	-288 22 -320 4 -261 -285 -306 -318				-316 24 -350 17 -273 -320 -334 -350	0
10 S		-264 17 -290 9 -240 -260 -284 -290	-273 16 -290 8 -250 -280 -289 -290	-280 8 -290 3 -270 -280 -287 -290			-280 21 -310 5 -260 -270 -304 -309	10 S
20 S		-276 8 -280 9 -260 -280 -280 -280	-285 15 -300 2 -271 -285 -295 -299	-280 -280 -280 2 -280 -280 -280 -280			-278 11 -290 4 -261 -280 -285 -289	20 S
30 S		-277 7 -290 6 -270 -275 -282 -289	-280 -280 -280 2 -280 -280 -280 -280	-285 5 -290 4 -280 -285 -290 -290			-290	30 S
40 S		-280 -280 -280 4 -280 -280 -280 -280	-270 10 -280 2 -260 -270 -277 -280	-283 5 -290 3 -280 -280 -287 -290				40 S
		-280 -280 -280 2 -280 -280 -280 -280	-279 6 -290 7 -270 -280 -280 -289	-285 5 -290 2 -280 -285 -288 -290				
			-278 4 -280 4 -271 -280 -280 -280	-280	1			
			-300 10 -310 2 -290 -300 -307 -310	-300 10 -310 2 -290 -300 -307 -310			-310	1
						-303 33 -369 8 -261 -295 -328 -364	-300	1
						-290 -290 -290 3 -290 -290 -290 -290		
						-365 47 -420 4 -295 -375 -401 -418		
			-400 50 -450 2 -352 -400 -434 -448	-411 29 -450 7 -371 -410 -450 -450	-397 25 -430 10 -354 -400 -420 -428			
				-419 21 -450 8 -391 -415 -448 -450	-434 9 -450 7 -421 -430 -440 -449			

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 290

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

60

50

40

30

20

10

0

10

20

30

40 S

70 N

60

50

40

30

20

10

0

10

20

30

403

-555 5 -560 2 -550 -555 -558 -560							-560 8 -570 3 -550 -560 -567 -570
-530 1			-480 1	-467 12 -480 3 -451 -470 -477 -480			-482 26 -529 5 -452 -480 -498 -526
	-465 5 -470 2 -460 -465 -468 -470		-450 -450 -450 2 -450 -450 -450 -450	-455 30 -500 4 -421 -450 -481 -498			-456 22 -499 8 -423 -455 -489 -496
	-450 10 -460 2 -440 -450 -457 -460			-426 48 -500 26 -305 -425 -460 -500	-417 29 -469 18 -380 -410 -450 -467		-423 41 -500 46 -357 -420 -458 -506
-385 22 -410 4 -352 -390 -400 -409	-433 37 -480 3 -392 -430 -464 -478	-407 33 -430 3 -363 -430 -430 -430	-385 25 -410 2 -361 -385 -402 -409		-423 38 -489 23 -354 -430 -454 -486		-416 38 -489 35 -350 -420 -440 -483
-380 39 -449 8 -317 -375 -415 -446	-412 39 -489 10 -352 -415 -436 -481	-405 49 -509 48 -299 -400 -455 -501			-410 34 -469 20 -348 -420 -440 -462		-405 44 -507 90 -308 -400 -448 -492
-386 28 -439 25 -340 -380 -420 -435	-383 32 -439 11 -340 -380 -414 -436	-400 106 -480 3 -259 -470 -477 -480			-379 43 -478 3 -321 -340 -401 -426		-379 43 -478 75 -300 -380 -420 -460
-362 25 -390 6 -322 -370 -382 -389	-363 20 -390 16 -319 -365 -380 -390						-364 29 -410 43 -302 -370 -390 -410
							-343 43 -400 12 -274 -350 -385 -400
							-303 25 -359 40 -260 -300 -330 -352
							-272 18 -309 25 -240 -270 -290 -305
							-278 10 -300 17 -260 -280 -280 -297
							-281 7 -290 13 -270 -280 -290 -290
							-279 7 -290 9 -263 -280 -280 -288
							-280 6 -290 11 -270 -280 -284 -290
							-278 4 -280 5 -271 -280 -280 -280
							-302 10 -310 5 -290 -310 -310 -310
							-302 31 -369 9 -262 -300 -324 -364
							-290 -290 -290 3 -290 -290 -290 -290
							-365 47 -420 4 -295 -375 -401 -418
						-420 1	-403 30 -450 20 -350 -410 -430 -450
						-430 1	-426 18 -450 16 -393 -430 -446 -450

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 310

LAT.

70 N						70 N
60						60
50						50
40	-480 20 -500 2 -461 -480 -494 -499				-513 9 -520 3 -501 -520 -520 -520	40
	-470 43 -530 6 -397 -470 -506 -527			-385 40 -459 26 -315 -390 -430 -455	-425 55 -480 2 -372 -425 -462 -478	
30	-426 19 -450 14 -380 -430 -440 -447			-383 19 -400 4 -352 -390 -395 -399		30
	-389 29 -440 14 -343 -385 -419 -437	-366 26 -410 14 -323 -360 -398 -407			-480 1	-445 17 -460 4 -421 -450 -460 -460
20	-393 12 -410 3 -380 -390 -404 -409	-351 22 -390 7 -321 -350 -371 -388	-348 27 -390 6 -304 -350 -366 -387	-330 1		-389 22 -430 29 -356 -390 -410 -430
		-336 13 -360 9 -313 -330 -347 -358	-338 7 -350 10 -330 -340 -346 -350	-343 5 -350 3 -340 -340 -347 -350		-353 14 -380 6 -340 -350 -364 -378
10		-340 22 -370 3 -320 -330 -357 -368	-323 21 -340 12 -284 -335 -340 -340	-338 13 -350 4 -321 -340 -350 -350		-337 7 -350 11 -330 -340 -344 -350
		-310 20 -330 2 -291 -310 -324 -329	-332 4 -340 6 -330 -330 -332 -339			-336 15 -379 12 -320 -330 -340 -371
0			-313 17 -330 3 -291 -320 -327 -330			-331 14 -350 9 -312 -330 -347 -350
	-315 15 -330 2 -301 -315 -325 -329	-333 12 -350 3 -320 -330 -344 -349		-330 1	-333 12 -350 8 -320 -330 -349 -350	
10		-295 5 -300 2 -290 -295 -298 -300			-330 -330 -330 5 -330 -330 -330 -330	10
		-326 22 -360 5 -301 -320 -347 -358	-332 10 -350 5 -321 -330 -337 -348	-330 -330 -330 2 -330 -330 -330 -330		-330 -330 -330 3 -330 -330 -330 -330
20		-334 21 -360 5 -310 -340 -354 -359	-348 20 -380 6 -330 -340 -372 -379	-341 15 -370 9 -322 -340 -357 -368		
		-357 26 -409 6 -331 -350 -370 -405	-366 23 -400 8 -331 -370 -389 -399	-395 46 -440 4 -341 -400 -440 -440		
30		-390 17 -420 6 -370 -390 -404 -418	-407 35 -460 9 -338 -410 -434 -457	-438 4 -440 4 -431 -440 -440 -440		
		-434 53 -510 5 -371 -440 -484 -507	-446 35 -519 14 -400 -435 -479 -515	-446 22 -489 20 -401 -445 -470 -486		
40 S			-460 33 -490 5 -412 -480 -490 -490	-478 24 -510 6 -442 -480 -502 -509		40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 310

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-580	1	-450	1	-525	5	-530	2	-524	19	-560	5	-560	1		-526	34	-579	10	
					-520	-525	-528	-530	-510	-520	-534	-557				-461	-520	-560	-576	
60	-590	1							-500	10	-510	2	-527	12	-540	3	-528	32	-588	6
									-490	-500	-507	-510	-511	-530	-537	-540	-492	-520	-550	-585
50	-475	5	-480	2	-480	1			-520	1			-466	36	-539	17	-470	35	-539	21
	-470	-475	-478	-480									-413	-470	-500	-530	-414	-480	-500	-532
40	-478	8	-490	4					-461	26	-509	12	-447	52	-529	48	-478	27	-529	14
	-470	-475	-485	-489					-409	-460	-475	-506	-280	-455	-490	-521	-435	-480	-500	-525
30	-460	30	-509	10	-460	30	-490	2	-466	44	-500	5	-410	37	-460	8	-440	51	-500	5
	-422	-455	-490	-506	-431	-460	-480	-489	-387	-490	-494	-499	-361	-405	-458	-460	-380	-460	-487	-498
20	-428	28	-470	17	-443	28	-490	13	-447	41	-536	74	-400	1			-474	33	-520	14
	-380	-440	-454	-467	-392	-440	-471	-488	-365	-450	-480	-515					-403	-470	-509	-517
10	-431	29	-479	33	-430	24	-460	10	-475	25	-500	2					-450	51	-500	4
	-363	-440	-460	-474	-385	-425	-456	-460	-451	-475	-492	-499					-374	-465	-495	-499
0	-416	24	-459	16	-425	22	-460	12												
	-369	-420	-440	-454	-392	-425	-445	-460												
30 S	-402	4	-410	5																
	-400	-400	-404	-409																
20	-400	1																		
10																				
0																				
10																				
20																				
30																				
40 S																				

70 N

60

50

40

30

20

10

0

10

20

30

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 330

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N																							70 N
																							</

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 350

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N					
60					
50					
40					
30					
20					
10					
0					
10					
20					
30					
40 S					

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 350

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

LAT.	70 N	60	50	40	30	20	10	0	10	20	30	40 S	LONGITUDE
	70 N	60	50	40	30	20	10	0	10	20	30	40 S	
	-546 31 -590 8 -503 -545 -586 -590	-505 38 -540 4 -452 -515 -540 -540	-487 27 -539 7 -451 -490 -492 -534	-570 49 -640 9 -495 -570 -624 -638	-537 48 -580 3 -474 -560 -574 -579								
	-533 12 -550 7 -520 -540 -540 -549	-551 33 -619 18 -497 -550 -583 -613	-545 23 -580 4 -521 -540 -566 -578	-543 36 -590 7 -510 -520 -590 -590	-539 43 -580 8 -456 -560 -570 -579								
	-507 48 -550 3 -444 -530 -544 -549	-549 37 -639 22 -494 -540 -580 -632	-533 54 -609 6 -440 -535 -570 -605	-470 39 -510 4 -413 -480 -505 -509	-535 24 -570 13 -487 -540 -560 -568								
	-577 40 -610 3 -523 -600 -607 -610	-551 32 -609 13 -497 -550 -581 -605	-536 52 -619 17 -426 -540 -590 -614	-530 52 -600 41 -400 -540 -586 -600	-524 48 -609 49 -380 -540 -550 -600	-533 53 -619 8 -446 -540 -576 -614							
	-539 33 -580 14 -466 -545 -580 -580	-560 20 -580 2 -541 -560 -574 -579	-529 47 -589 39 -400 -540 -570 -582	-528 45 -590 29 -411 -530 -570 -590	-553 26 -580 6 -505 -560 -572 -579	-560 33 -609 17 -479 -570 -584 -604							
	-538 27 -599 24 -485 -545 -553 -555	-526 31 -579 33 -450 -530 -550 -574	-529 43 -614 97 -440 -530 -570 -600	-493 34 -540 3 -461 -480 -521 -538		-556 18 -580 17 -516 -560 -570 -580	-532 39 -613 219 -450 -540 -570 -600						
	-527 29 -590 57 -460 -530 -550 -589	-514 23 -549 31 -460 -520 -532 -544	-506 29 -540 5 -462 -510 -534 -539			-565 24 -600 10 -522 -570 -586 -598	-523 37 -595 160 -432 -520 -560 -590						
	-503 28 -588 75 -440 -500 -520 -566	-483 32 -539 10 -432 -485 -511 -536				-535 11 -550 4 -521 -535 -545 -549	-500 35 -586 146 -420 -500 -540 -580						
	-492 24 -538 62 -432 -500 -510 -528					-510 20 -530 2 -491 -510 -524 -529	-482 27 -550 127 -430 -480 -510 -535						
	-477 19 -510 27 -440 -480 -500 -510					-490 1	-467 24 -510 119 -430 -470 -500 -510						
	-463 11 -480 16 -450 -460 -476 -480						-449 18 -480 47 -409 -450 -470 -480						
	-456 7 -470 9 -450 -450 -460 -468						-437 18 -470 42 -396 -440 -454 -470						
	-457 5 -480 3 -450 -460 -480 -460						-439 13 -469 29 -420 -430 -455 -464						
							-434 11 -460 28 -420 -430 -440 -460						
							-432 12 -460 36 -410 -430 -440 -460						
							-433 13 -460 34 -400 -430 -440 -460						
							-435 14 -478 37 -407 -430 -450 -466						
							-437 15 -470 37 -410 -440 -450 -470						
							-449 31 -529 42 -408 -440 -480 -522						
							-496 45 -560 46 -418 -500 -540 -560						
							-520 1	-518 36 -588 56 -442 -520 -550 -579					
							-560 1	-546 27 -588 29 -480 -550 -570 -579					

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 370

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						-550	1	70 N
						-540	1	
60						-516	43 -580 15	60
						-443	-520 -563 -580	
						-536	48 -629 12	
50						-464	-530 -582 -621	50
						-535	61 -630 31	
						-422	-540 -592 -630	
						-517	53 -610 32	
						-446	-500 -590 -610	
	-568 32 -610 4			-510 44 -579 4		-527	47 -617 47	
40	-523 -570 -591 -608			-462 -500 -546 -576		-450	-520 -580 -602	40
	-548 24 -570 11			-525 41 -599 37		-544	41 -619 41	
	-492 -550 -570 -570			-450 -520 -582 -593		-474	-550 -590 -612	
	-537 40 -570 3			-490 20 -520 7		-534	27 -570 5	
30	-483 -560 -567 -570			-461 -490 -510 -519		-501	-530 -564 -569	30
	-525 15 -540 2	-497 26 -550 12		-497 12 -510 3		-510	-510 -510 -510	
	-511 -525 -535 -539	-462 -490 -517 -548		-481 -500 -507 -510		-510	-510 -510 -510	
	-495 9 -510 10	-496 13 -510 9		-520	1	-518	21 -559 38	
20	-480 -500 -500 -508	-472 -500 -507 -510				-480	-520 -540 -553	20
		-491 11 -510 15		-470	1	-502	11 -520 11	
		-473 -490 -500 -510				-482	-500 -514 -520	
	-475 5 -480 2	-483 14 -500 15		-485 5 -490 4		-495	11 -520 15	
10	-470 -475 -478 -480	-453 -490 -498 -500		-480 -485 -490 -490		-483	-490 -500 -520	10
	-470	1	-484 10 -500 12			-497	11 -519 23	
			-470 -490 -490 -498			-480	-500 -510 -516	
			-490 10 -500 2			-495	14 -520 24	
0			-480 -490 -497 -500			-480	-490 -510 -520	0
	-450	1	-450	1		-496	15 -520 20	
						-480	-490 -510 -520	
			-460	1		-490	13 -520 19	
10						-480	-500 -510 -520	10
						-493	5 -500 3	
						-490	-490 -497 -500	
			-480	1		-499	11 -520 15	
						-480	-500 -510 -517	
						-493	12 -510 3	
20			-480 -490 -504 -509			-472	-490 -500 -500	20
						-490	15 -520 6	
			-471 -490 -496 -517			-485	22 -529 8	
						-453	-485 -499 -526	
						-517	29 -570 9	
			-517 -510 -544 -567			-523	49 -570 9	
30						-442	-550 -567 -570	30
			-555 5 -560 2			-548	46 -600 9	
			-550 -555 -558 -560			-450	-560 -577 -597	
						-539	37 -589 22	
			-470 -550 -570 -586			-562	29 -590 6	
40 S						-513	-570 -590 -590	40 S

LONGITUDE



## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

-546	-44	-639	9	-520	1	-510	16	-530	4	-490	25	-520	4	-480	1	-523	41	-637	20
-478	-530	-574	-630			-491	-510	-525	-529	-461	-490	-515	-519			-464	-520	-550	-617
-553	58	-687	12	-559	50	-649	14	-480	1	-513	53	-619	6	-505	22	-540	54	-685	40
-494	-525	-600	-670	-488	-565	-600	-645			-470	-490	-556	-612	-472	-505	-524	-538	-470	-520
-518	38	-580	5	-555	54	-639	11	-478	30	-500	6	-513	65	-619	4	-518	67	-620	16
-480	-510	-554	-577	-466	-560	-608	-636	-424	-495	-500	-500	-452	-490	-562	-613	-403	-500	-590	-617
-548	53	-620	15	-541	39	-599	7	-518	65	-600	16	-540	47	-628	24	-539	54	-630	68
-466	-560	-600	-620	-481	-550	-562	-595	-406	-525	-580	-600	-438	-550	-580	-616	-453	-550	-610	-630
-560	34	-629	24	-566	53	-610	7	-553	54	-620	35	-549	41	-629	49	-538	30	-599	12
-499	-570	-583	-621	-467	-600	-610	-610	-417	-560	-610	-620	-460	-560	-590	-620	-490	-540	-557	-596
-570	39	-630	27	-548	38	-600	71	-550	44	-637	90	-510	43	-570	3	-588	25	-620	8
-510	-570	-618	-630	-470	-550	-590	-600	-453	-550	-598	-622	-471	-490	-544	-567	-537	-595	-600	-617
-552	35	-640	54	-546	36	-598	58	-580	16	-600	4					-595	5	-600	2
-481	-555	-580	-638	-470	-560	-580	-590	-561	-580	-595	-599					-590	-595	-598	-600
-546	27	-618	84	-519	30	-550	9	-545	5	-550	2					-539	31	-620	117
-500	-540	-570	-603	-463	-530	-547	-550	-540	-545	-548	-550					-473	-540	-570	-607
-533	26	-596	63													-525	27	-593	114
-472	-540	-550	-578													-470	-530	-550	-570
-534	12	-550	5													-540	1	-513	21
-520	-540	-544	-549													-480	-510	-540	-550
-495	15	-510	2													-495	13	-520	29
-481	-495	-505	-509													-470	-500	-510	-520
-509	11	-520	8													-492	15	-520	44
-491	-510	-520	-520													-459	-490	-501	-520
-511	15	-540	7													-495	15	-537	43
-491	-510	-521	-538													-470	-490	-510	-523
																-495	13	-520	26
																-480	-490	-510	-520
																-493	20	-520	23
																-450	-490	-515	-520
																-495	15	-520	21
																-468	-490	-510	-520
																-497	11	-519	19
																-480	-500	-510	-516
-540	1															-498	15	-539	20
																-474	-500	-510	-532
																-491	19	-529	19
																-457	-490	-510	-526
																-521	39	-570	20
																-444	-530	-560	-570
																-550	1	-543	38
																-460	-550	-570	-593
																-561	34	-610	14
																-503	-570	-590	-607

150W

120W

90W

60W

30W

0

30E

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 390

LAT.

70 N						-540	1	70 N
						-521	38 -629 26	
60						-470 -520 -540 -625		60
						-540 33 -609 14	-512 37 -595 39	
						-493 -540 -569 -605	-448 -510 -550 -570	
50						-533 39 -600 21	-522 37 -617 24	50
						-468 -530 -576 -600	-464 -520 -560 -602	
						-566 59 -650 10	-571 45 -659 8	
						-492 -545 -640 -648	-504 -565 -608 -653	
40	-530	1				-564 28 -609 9	-574 34 -638 18	40
						-520 -570 -580 -605	-513 -580 -610 -630	
						-565 30 -610 14	-595 21 -620 6	
						-530 -550 -599 -610	-562 -595 -620 -620	
30	-540 10 -550 2					-560 -560 -560 2	-647 26 -670 3	30
	-530 -540 -547 -550					-560 -560 -560 -560	-551 -560 -574 -579	
	-557 12 -570 3	-540	1				-590 17 -610 5	
	-541 -560 -567 -570						-562 -590 -604 -609	
20							-552 25 -590 6	20
							-520 -555 -574 -588	
							-573 4 -580 4	
							-570 -570 -575 -579	
10						-543 9 -550 3	-560 -560 -560 2	10
						-531 -550 -550 -550	-560 -560 -560 -560	
						-545 9 -550 4	-557 6 -570 10	
						-531 -550 -550 -550	-550 -560 -560 -568	
0						-535 5 -540 2	-555 8 -570 18	0
						-530 -535 -538 -540	-543 -550 -563 -570	
						-533 17 -550 3	-553 9 -570 20	
						-511 -540 -547 -550	-540 -550 -560 -570	
10						-550 -550 -550 2	-553 8 -570 16	10
						-550 -550 -550 -550	-540 -550 -560 -567	
						-540 -540 -540 2	-558 9 -570 16	
						-540 -540 -540 -540	-540 -560 -566 -570	
20						-527 17 -550 3	-550 -550 -550 -550	20
						-510 -520 -540 -549	-550 -550 -550 -550	
						-533 12 -550 3	-560 -560 -560 -560	
						-520 -530 -544 -549	-561 17 -590 12	
30						-535 5 -540 2	-554 16 -570 5	30
						-530 -535 -538 -540	-531 -560 -570 -570	
						-530	1	
						-548 39 -609 4	-573 41 -620 3	
						-511 -535 -581 -606	-522 -580 -607 -618	
40 S						-573 21 -600 3	-583 35 -610 6	40 S
						-551 -570 -590 -599	-551 47 -619 10	
						-516 -600 -610 -610	-492 -545 -600 -616	
						-608 19 -620 5	-549 57 -649 15	
						-573 -620 -620 -620	-473 -550 -608 -644	
30E	60E	90E	120E	150E	180W	150W		

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 390

MEAN

LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-510 -490	21 -505	-550 -526	6 -547	-515 -510	5 -515	-520 -518	2 -520	-500 -490	10 -500	-510 -507	2 -510	-520	1					-513 -490	18 -510	-550 -525	12 -548	70 N							
	-529 -469	40 -520	-619 -562	16 -614	-514 -464	30 -520	-550 -537	5 -548	-520 -482	28 -540	-540 -540	3 -540	-605 -535	45 -625	-640 -640	4 -640	-580	1					-530 -461	44 -520	-640 -564	55 -639	60			
60	-561 -503	43 -545	-630 -618	14 -627	-562 -513	39 -550	-629 -598	6 -626	-528 -490	42 -510	-599 -568	5 -596	-497 -463	25 -490	-540 -528	15 -540	-508 -460	42 -500	-600 -550	23 -600			-522 -453	43 -515	-630 -560	116 -620	60			
	-585 -512	55 -585	-670 -640	12 -670	-562 -489	41 -570	-629 -596	10 -625	-542 -482	54 -540	-639 -576	5 -632	-563 -492	40 -565	-620 -606	16 -620	-566 -476	59 -570	-650 -630	29 -650	-603 -496	82 -640	-680 -667	3 -678	-553 -474	53 -540	-676 -620	120 -662	50	
50	-598 -544	37 -590	-660 -646	21 -660	-577 -486	51 -590	-640 -621	7 -638	-594 -512	47 -590	-679 -641	13 -673	-582 -493	54 -580	-680 -640	16 -677	-592 -488	55 -620	-660 -637	9 -657	-603 -512	56 -610	-660 -660	7 -660	-587 -488	51 -580	-680 -640	91 -672	40	
	-597 -520	38 -590	-650 -643	24 -650	-575 -508	40 -560	-640 -620	40 -640	-568 -490	49 -570	-675 -610	55 -649					-540 -530	10 -540	-550 -547	2 -550	-605 -562	34 -605	-660 -641	10 -658	-575 -490	43 -580	-669 -620	179 -650	30	
40	-567 -505	41 -560	-630 -620	13 -628	-569 -501	32 -570	-628 -610	56 -620	-585 -562	16 -580	-610 -602	6 -609													-570 -500	34 -570	-630 -610	108 -620	20	
	-567 -551	12 -570	-580 -577	3 -580	-559 -509	26 -560	-609 -575	12 -606	-560			1													-569 -516	34 -560	-669 -587	28 -665	10	
30	-563 -550	22 -550	-600 -578	4 -597																					-570 -520	24 -555	-610 -570	13 -587	0	
	-550			1															-570		1				-554 -520	23 -555	-590 -570	8 -587	30	
20	-563 -560	5 -560	-570 -567	3 -570															-565 -560	5 -565	-570 -568	2 -570			-568 -560	6 -570	-580 -570	9 -578	20	
	-564 -560	5 -560	-570 -570	7 -570															-560		1				-557 -533	11 -560	-570 -569	14 -570	10	
10	-563 -560	7 -560	-580 -584	6 -578															-560 -560	-560 -560	2 -560				-555 -535	10 -550	-579 -570	24 -570	0	
	-570 -570	-570 -570	-570 -570	2 -570															-550 -540	10 -550	-560 -557	2 -560			-553 -535	11 -550	-570 -570	26 -570	30	
0	-570 -570	-570 -570	-570 -570	2 -570															-540 -540	-540 -540	2 -540				-551 -527	12 -580	-570 -564	30 -570	0	
	-570 -570	-570 -570	-570 -570	2 -570															-560 -560	-560 -560	2 -560				-554 -540	9 -550	-570 -560	26 -570	10	
10	-570			1															-580		1				-553 -515	15 -560	-579 -570	25 -575	0	
	-570			1																					-557 -523	18 -560	-589 -570	18 -587	30	
20																									-548 -530	15 -540	-570 -567	9 -570	20	
																									-555 -511	40 -540	-620 -606	8 -619	10	
30																			-570		1				-565 -494	42 -570	-619 -600	20 -616	0	
																									-564 -474	57 -570	-649 -620	20 -642	40S	
40 S																														
	150W	120W	90W	60W	30W	0	30E																							

LONGITUDE

## STATIC AIR TEMPERATURE CLIMATOLOGY

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

OCTOBER

FL 410

LAT.

[illegible]

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER  
FL 410

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

**70 N**

LAT

**70 N**

60

50

40

30

20

10

0

10

20

30

40 S

60

50

40

30

20

10

0

10

20

30

405

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

OCTOBER

FL 430

LAT.

70 N							70 N
60							60
50					-580	1	50
40					-541 14 -550 7 -514 -550 -550 -550		40
30					-588 23 -630 11 -560 -580 -614 -628	-559 26 -609 8 -516 -555 -570 -604	30
20					-606 25 -650 10 -565 -610 -627 -648		20
10							10
0							0
10							10
20							20
30							30
40 S							40 S

LONGITUDE

OCTOBER  
FL 430

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 270

LAT.

70 N							70 N
60							60
50							50
40	-400 1						40
30	-417 9 -430 3 -410 -410 -424 -429			-340 42 -419 15 -273 -340 -378 -414			30
20	-382 39 -440 5 -340 -380 -421 -438						20
10	-326 37 -370 11 -256 -330 -360 -368			-270 1			10
0	-310 29 -350 3 -281 -300 -334 -348	-253 25 -280 3 -222 -260 -274 -279	-270 1		-278 30 -340 26 -230 -280 -310 -340		0
10		-210 1	-240 1	-220 1		-263 15 -280 4 -241 -265 -275 -279	10
20							20
30							30
40 S							40 S

LONGITUDE



MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

NOVEMBER  
FL 270

LAT

TABULATED TEMPERATURES = °C \* 10

70 N								70 N
60								60
					-430 34 -480 4 -391 -425 -461 -478	-431 66 -549 7 -345 -420 -483 -542	-431 56 -548 11 -348 -420 -480 -536	
50	-317 9 -330 3 -310 -310 -324 -329					-443 38 -490 4 -401 -440 -480 -489	-389 69 -490 7 -310 -400 -471 -488	
	-370 1	-340 37 -380 3 -292 -350 -370 -379	-386 56 -489 40 -280 -395 -438 -482			-470 52 -550 9 -386 -470 -527 -547	-398 63 -547 54 -281 -400 -465 -529	
40	-333 31 -370 20 -274 -340 -370 -370	-395 45 -440 2 -352 -395 -426 -438	-352 41 -380 5 -278 -370 -374 -379			-358 24 -400 6 -330 -360 -376 -397	-347 41 -438 51 -270 -350 -380 -430	
	-319 44 -399 11 -254 -310 -368 -396	-338 35 -399 21 -284 -340 -380 -396					-338 43 -437 37 -264 -340 -380 -418	
30							-322 39 -370 12 -254 -325 -360 -368	
	-230 1						-277 32 -349 34 -227 -280 -307 -343	
20							-246 24 -280 7 -211 -240 -270 -279	
							-221 12 -240 9 -202 -220 -230 -238	
10								
							-236 8 -250 10 -222 -240 -240 -248	
0							-240 11 -250 5 -222 -240 -250 -250	
10							-240 21 -270 5 -220 -230 -264 -269	
							-233 20 -260 6 -202 -235 -252 -259	
20							-250 1	
30				-380 1			-346 43 -410 16 -273 -355 -386 -407	
							-353 28 -428 15 -313 -350 -368 -419	
40 S								40S
150W	120W	90W	60W	30W	0	30E		

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 290

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N						
60						
50						
40	-468 24 -510 5 -450 -450 -491 -508					
	-428 33 -470 6 -382 -430 -462 -469			-398 65 -470 9 -270 -410 -460 -468		
30	-404 28 -469 13 -365 -390 -431 -463			-315 45 -360 2 -272 -315 -346 -358		
	-367 33 -390 3 -323 -390 -390 -390	-343 5 -350 3 -340 -340 -347 -350				-320 10 -330 2 -310 -320 -327 -330
20	-328 21 -379 9 -310 -320 -337 -374	-303 10 -320 13 -282 -300 -310 -318	-273 24 -300 7 -232 -290 -290 -299	-260 1		-326 36 -399 22 -260 -325 -356 -396
		-281 11 -300 18 -260 -280 -290 -300	-265 11 -290 6 -260 -260 -266 -287	-245 5 -250 2 -240 -245 -248 -250		-315 17 -340 4 -300 -310 -330 -339
10		-277 8 -290 10 -262 -280 -280 -288	-278 7 -290 6 -270 -280 -282 -289	-260 14 -270 3 -241 -270 -270 -270		-290 10 -300 2 -280 -290 -297 -300
		-276 5 -280 5 -270 -280 -280 -280	-280 -280 -280 4 -280 -280 -280 -280			
0		-285 5 -290 2 -280 -285 -288 -290	-290 17 -320 4 -280 -280 -301 -318			
		-280 1	-278 7 -290 10 -262 -280 -280 -288			
10			-275 7 -290 8 -270 -270 -280 -289			
			-275 5 -280 2 -270 -275 -278 -280			-295 5 -300 2 -290 -295 -298 -300
20					-300 1	
					-335 25 -360 2 -311 -335 -352 -359	
30					-365 15 -380 2 -351 -365 -375 -379	
			-394 43 -460 5 -360 -360 -441 -458	-395 17 -420 8 -364 -395 -409 -419	-403 46 -450 3 -343 -420 -440 -449	
40 S				-403 23 -440 14 -370 -410 -429 -437	-430 10 -440 2 -420 -430 -437 -440	
	30E	60E	90E	120E	150E	180W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

NOVEMBER  
FL 290

TABULATED TEMPERATURES  $\times 10^{\circ}\text{C}$

MEAN LAT

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 310

LAT.

70 N						70 N
60					-580	1
50						
40	-500 24 -540 4 -480 -490 -521 -538					
	-491 26 -548 21 -448 -490 -520 -538			-416 56 -509 20 -318 -415 -489 -506	-410	1
30	-453 16 -489 20 -430 -450 -470 -486			-380	1	
	-412 29 -469 21 -360 -410 -440 -466	-393 15 -420 16 -359 -390 -406 -417				
20	-368 13 -390 4 -360 -360 -376 -388	-351 18 -389 15 -323 -350 -370 -384	-344 14 -360 5 -330 -340 -360 -360			-380 35 -450 24 -330 -380 -410 -450
		-334 11 -359 19 -314 -340 -340 -353	-326 10 -340 5 -311 -330 -334 -339	-330	1	-366 15 -390 5 -350 -370 -377 -388
10		-330 10 -340 8 -311 -330 -340 -340	-323 10 -340 7 -310 -320 -330 -339	-317 21 -340 3 -291 -320 -334 -339		-343 10 -360 7 -330 -340 -350 -359
		-325 5 -330 4 -320 -325 -330 -330	-325 5 -330 6 -320 -325 -330 -330			-338 17 -370 6 -321 -330 -354 -368
0			-313 5 -320 3 -310 -310 -317 -320			-340 10 -350 2 -330 -340 -347 -350
		-330	1	-328 16 -360 6 -311 -325 -336 -357		
10			-316 15 -330 5 -292 -320 -330 -330			
		-330 19 -369 6 -311 -325 -338 -366	-330 6 -340 5 -321 -330 -334 -339	-330	1	-355 5 -360 2 -350 -355 -358 -360
20		-360 -360 -360 -360 -360 -360 -360 -360	-328 4 -330 5 -321 -330 -330 -330	-355 15 -370 2 -341 -355 -365 -369		-330 -330 -330 2 -330 -330 -330 -330
		-357 5 -360 3 -350 -360 -360 -360	-356 29 -400 5 -321 -360 -381 -398	-370 14 -390 3 -360 -360 -380 -389	-340	1
30		-393 16 -420 7 -380 -380 -410 -419	-410 25 -440 4 -372 -415 -430 -439	-420 10 -430 2 -410 -420 -427 -430		
		-415 24 -460 6 -391 -405 -436 -457	-443 29 -470 15 -370 -450 -460 -470	-437 28 -480 15 -393 -440 -468 -477		
40 S			-448 21 -470 9 -403 -460 -460 -468	-480 19 -500 6 -444 -485 -492 -499		

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 310

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

70 N										70 N	
	-470	1				-530 20 -550 2 -511 -530 -544 -549		-505 55 -560 2 -452 -505 -542 -558		-520 48 -580 6 -452 -530 -564 -578	
60						-505 30 -540 12 -444 -510 -532 -540		-488 64 -540 11 -372 -490 -534 -540		-487 53 -540 23 -374 -510 -535 -540	
	-430	1		-540	1	-517 47 -580 10 -450 -520 -566 -578		-485 30 -539 23 -423 -490 -515 -531	-491 49 -549 9 -402 -510 -520 -545	-493 42 -579 44 -409 -500 -531 -571	
50	-410 31 -469 5 -382 -400 -425 -464			-500 37 -540 3 -452 -510 -530 -539		-473 19 -500 6 -443 -470 -492 -499		-509 14 -520 7 -482 -510 -520 -520	-524 25 -598 17 -500 -520 -544 -584	-496 45 -594 38 -395 -510 -530 -563	
	-430	1	-469 30 -520 11 -440 -460 -504 -518	-466 44 -550 42 -390 -460 -510 -550					-510 43 -618 20 -438 -500 -540 -605	-479 46 -611 78 -390 -480 -527 -564	
40	-426 37 -499 12 -370 -425 -455 -493		-457 38 -490 6 -386 -475 -482 -489	-437 12 -450 3 -421 -440 -447 -450					-459 16 -480 7 -440 -460 -480 -480	-449 50 -544 70 -338 -455 -500 -520	
	-409 32 -469 17 -350 -420 -439 -464		-413 37 -460 7 -347 -410 -450 -459						-420	1	-428 34 -489 46 -340 -430 -460 -481
30	-380 -380 2 -380 -380 -380 -380										-403 25 -469 39 -358 -400 -420 -462
	-340	1									-368 31 -450 48 -330 -380 -400 -450
20											-338 17 -388 30 -310 -340 -350 -378
		-340	1								-330 15 -359 26 -300 -330 -340 -358
10											-330 13 -369 16 -320 -330 -330 -364
											-324 15 -350 5 -310 -320 -337 -348
0											-329 15 -359 7 -311 -330 -331 -356
											-316 15 -330 5 -292 -320 -330 -330
10											-334 16 -370 14 -313 -330 -349 -367
											-339 16 -370 11 -322 -330 -360 -368
20						-360 16 -370 2 -350 -360 -367 -370					-359 20 -400 14 -323 -360 -370 -397
											-402 22 -440 13 -372 -410 -421 -438
30						-480	1				-437 30 -480 37 -379 -450 -462 -480
											-461 28 -500 15 -408 -460 -488 -497
40 S	150W	120W	90W	60W	30W	0	30E				

LONGITUDE

337

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX A C

# STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 330

LAT.

[illegible]

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 330

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N					-580 22 -610 3 -560 -570 -597 -608	-577 5 -580 3 -570 -580 -580 -580			-578 16 -610 6 -561 -575 -586 -607	70 N
					-540 57 -580 7 -428 -570 -580 -580	-496 32 -559 7 -461 -490 -512 -554			-518 51 -580 14 -430 -510 -570 -580	
60					-523 31 -550 3 -482 -540 -547 -550	-493 35 -549 4 -461 -480 -521 -546			-500 41 -559 18 -423 -500 -550 -557	60
	-480 -480 -480 -480	-520 1	-543 37 -580 7 -481 -560 -570 -579	-504 46 -579 13 -412 -520 -532 -575	-523 50 -589 29 -422 -540 -565 -594	-513 56 -609 8 -434 -500 -568 -604			-519 50 -608 63 -407 -530 -570 -598	50
50	-417 12 -430 3 -401 -420 -427 -430	-506 28 -559 5 -481 -500 -522 -555	-528 32 -580 16 -473 -535 -556 -577	-514 47 -580 25 -414 -520 -560 -580	-556 17 -580 11 -532 -560 -574 -580	-525 28 -579 15 -483 -530 -550 -572			-521 43 -580 79 -411 -530 -560 -580	50
	-481 16 -510 7 -460 -480 -491 -508	-518 32 -579 15 -463 -510 -548 -574	-517 36 -580 52 -450 -520 -560 -580	-520 1		-526 25 -560 21 -484 -530 -550 -560			-513 36 -580 111 -430 -510 -550 -580	40
40	-470 25 -529 16 -440 -460 -490 -521	-485 43 -540 17 -389 -480 -530 -540	-433 24 -460 4 -401 -435 -455 -459			-506 10 -520 8 -491 -505 -519 -520			-483 47 -567 107 -371 -490 -530 -550	40
	-454 27 -500 26 -410 -460 -480 -500	-466 49 -520 9 -371 -470 -510 -518				-510 10 -520 2 -500 -510 -517 -520			-469 39 -528 74 -365 -470 -510 -520	30
30	-463 29 -510 21 -420 -470 -488 -510	-450 10 -460 2 -440 -450 -457 -460							-445 29 -510 62 -400 -440 -480 -510	30
	-438 45 -509 6 -381 -440 -478 -506	-420 1							-421 38 -507 54 -371 -410 -470 -490	20
20		-370 1	-440 1						-380 18 -438 24 -350 -380 -390 -426	20
			-440 1	-440 1					-379 24 -440 22 -344 -375 -380 -440	10
10				-410 1					-378 10 -409 20 -364 -380 -380 -402	10
									-380 14 -419 21 -360 -380 -390 -416	0
0									-380 12 -409 17 -360 -380 -390 -404	0
				-400 1					-383 12 -409 23 -360 -380 -395 -406	10
10	-390 1			-395 5 -400 2 -390 -395 -398 -400					-386 16 -419 33 -360 -380 -400 -414	10
				-430 1					-388 22 -429 24 -350 -385 -410 -425	20
20				-460 1					-400 28 -460 27 -355 -400 -420 -460	20
				-510 1					-445 36 -510 24 -385 -445 -480 -510	30
30				-520 -520 -520 -520					-484 27 -529 48 -420 -480 -510 -521	30
									-501 22 -539 24 -460 -505 -520 -535	40S
40 S										

339

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

# STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER.

FL 350

LAT.

70 N

60

4 50

40

30

20

10

0

10

20

30

**40 S**

LONGITUDE



## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 350

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N	-560 -560 -560 2 -560 -560 -560 -560	-615 45 -660 2 -572 -615 -646 -658	-620 1	-620 1			-598 38 -659 6 -560 -595 -628 -656	70 N
60	-519 43 -609 10 -462 -515 -551 -601	-554 46 -649 10 -500 -540 -597 -643		-480 -480 -480 2 -480 -480 -480 -480	-460 10 -470 2 -492 -590 -620 -620		-525 49 -647 25 -455 -520 -572 -631	60
50	-495 75 -570 2 -423 -495 -546 -567	-551 55 -657 18 -467 -550 -600 -643	-545 45 -590 2 -502 -545 -576 -588	-593 45 -650 7 -517 -590 -640 -649	-578 41 -620 11 -492 -590 -620 -620		-561 56 -659 44 -454 -575 -620 -651	50
40	-400 8 -410 3 -390 -400 -407 -410	-559 44 -610 12 -489 -570 -600 -608	-533 45 -609 12 -464 -535 -580 -603	-551 62 -650 30 -446 -560 -634 -650	-566 67 -659 35 -414 -590 -616 -653	-550 43 -610 4 -493 -550 -586 -607	-546 63 -657 112 -402 -560 -610 -650	40
30	-543 46 -600 6 -459 -550 -576 -597	-560 29 -590 3 -522 -570 -584 -589	-550 53 -630 29 -446 -540 -610 -630	-550 56 -649 22 -434 -550 -596 -646	-570 16 -590 3 -551 -570 -584 -589	-553 34 -590 14 -478 -565 -580 -590	-544 52 -647 91 -438 -550 -590 -632	30
20	-530 42 -599 10 -480 -540 -570 -595	-537 35 -599 14 -485 -535 -579 -595	-532 53 -640 45 -419 -530 -590 -640	-540 1	-640 10 -650 2 -830 -640 -647 -650	-563 33 -599 20 -471 -570 -590 -596	-534 54 -646 122 -410 -540 -580 -636	20
10	-526 33 -607 37 -467 -530 -552 -588	-532 24 -588 25 -480 -530 -560 -576	-528 24 -560 13 -480 -530 -550 -558			-558 31 -590 10 -497 -565 -590 -590	-529 43 -616 136 -430 -530 -570 -603	10
0	-510 26 -565 64 -460 -510 -530 -550	-505 34 -569 8 -463 -490 -538 -566				-540 -540 -540 2 -540 -540 -540 -540	-508 34 -570 107 -420 -510 -540 -560	0
10 S	-489 23 -538 61 -450 -480 -514 -530						-483 29 -540 95 -420 -480 -510 -540	10 S
20 S	-466 19 -509 14 -433 -465 -480 -502	-437 5 -440 3 -430 -440 -440 -440					-460 20 -510 102 -420 -460 -480 -510	20 S
30 S	-450 1	-427 5 -430 3 -420 -430 -430 -430					-432 22 -488 32 -396 -430 -450 -478	30 S
40 S	-430 1		-413 9 -420 3 -401 -420 -420 -420				-420 12 -449 24 -400 -420 -430 -441	40 S
50 S			-470 1				-432 12 -468 22 -414 -430 -440 -457	50 S
60 S			-460 -460 -460 2 -460 -460 -460 -460				-434 11 -460 27 -415 -430 -440 -460	60 S
70 S			-450 1	-450 1			-429 14 -459 37 -407 -430 -450 -453	70 S
80 S				-460 1			-430 16 -460 32 -406 -430 -450 -460	80 S
90 S	-470 1						-431 16 -470 42 -400 -430 -440 -470	90 S
100 S							-435 17 -470 30 -410 -430 -454 -470	100 S
110 S				-490 1			-458 31 -509 37 -402 -460 -490 -503	110 S
120 S							-491 29 -539 36 -424 -495 -520 -533	120 S
130 S							-523 25 -587 38 -477 -530 -541 -568	130 S
140 S							-530 26 -569 28 -468 -530 -550 -565	140 S

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 370

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

70 N						-510	1	
60						-485 35 -520 2 -451 -485 -509 -519		
					-570	1	-549 62 -640 15 -448 -550 -635 -640	
50						-547 50 -659 12 -482 -545 -582 -651	-527 63 -640 10 -460 -500 -600 -640	
						-543 54 -630 16 -459 -530 -610 -627	-542 52 -620 9 -458 -540 -602 -618	
40	-590	1			-519 27 -569 7 -481 -520 -532 -565	-538 54 -629 16 -459 -520 -606 -624	-512 60 -570 5 -423 -550 -584 -569	
	-581 23 -620 10 -552 -580 -606 -618				-517 41 -627 20 -451 -515 -550 -611	-514 44 -617 25 -445 -510 -552 -601	-430	1
30	-544 39 -570 9 -456 -560 -570 -570				-463 5 -470 3 -460 -460 -467 -470	-510 10 -520 2 -500 -510 -517 -520	-490	1
	-548 10 -560 5 -540 -540 -560 -560	-530 40 -580 8 -473 -530 -570 -579			-495 5 -500 2 -490 -495 -498 -500		-527 25 -570 16 -490 -530 -556 -567	
20		-500 19 -540 8 -480 -495 -518 -537	-483 22 -510 6 -444 -485 -502 -509	-500	1		-500 35 -570 50 -440 -495 -540 -570	
		-480 12 -490 8 -454 -480 -490 -490		-465 15 -480 2 -451 -465 -475 -479	-450 7 -460 4 -441 -450 -455 -459	-488 24 -530 8 -460 -490 -509 -527		
10		-480 8 -490 3 -470 -480 -487 -490		-468 8 -480 4 -460 -465 -475 -479		-495 16 -520 8 -471 -500 -509 -519		
	-450	1	-480	1	-460	1	-491 13 -510 8 -471 -490 -508 -510	
0	-470	1	-480	1			-489 8 -500 7 -480 -490 -500 -500	
	-460 7 -470 4 -451 -460 -465 -469	-460 10 -470 2 -450 -460 -467 -470				-485 9 -500 4 -480 -480 -490 -499		
10		-465 5 -470 4 -460 -465 -470 -470				-485 5 -490 2 -480 -485 -488 -490		
		-460 -460 -460 3 -460 -460 -460 -460				-485 5 -490 2 -480 -485 -488 -490		
20		-470 14 -490 3 -460 -460 -480 -489				-493 5 -500 3 -490 -490 -497 -500		
		-473 18 -490 4 -451 -475 -490 -490	-500 14 -520 3 -490 -490 -510 -519	-485 5 -490 2 -480 -485 -488 -490	-505 15 -520 2 -491 -505 -515 -519			
30		-480 14 -490 3 -461 -490 -490 -490	-534 30 -580 8 -490 -535 -559 -577	-505 27 -530 4 -463 -515 -525 -529				
		-515 25 -540 2 -491 -515 -532 -539	-556 32 -610 16 -510 -560 -582 -610	-555 25 -580 2 -531 -555 -572 -579				
40 S			-556 34 -609 22 -500 -570 -590 -602	-520 10 -530 2 -510 -520 -527 -530				

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 370

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N	-510 14 -520 3 -491 -520 -520 -520	-465 5 -470 2 -460 -465 -468 -470					-495 24 -520 6 -461 -500 -520 -520	70 N
60	-520 67 -640 12 -462 -485 -625 -640	-523 68 -630 7 -461 -480 -620 -629	-470 1				-515 65 -640 22 -454 -480 -620 -640	60
50	-559 71 -650 10 -416 -575 -622 -648	-532 54 -619 11 -460 -540 -594 -616	-480 1	-520 28 -540 3 -462 -540 -540 -540	-581 46 -630 7 -530 -590 -630 -630		-549 61 -649 48 -438 -545 -625 -641	50
40	-507 73 -639 7 -398 -500 -563 -630	-525 44 -599 6 -463 -530 -552 -594	-507 35 -569 6 -470 -500 -538 -566	-576 64 -688 20 -461 -570 -650 -679	-599 52 -660 34 -470 -610 -640 -660	-598 49 -640 5 -516 -630 -634 -639	-565 88 -681 100 -450 -570 -640 -660	40
30	-544 53 -609 18 -417 -560 -590 -603	-590 1	-531 58 -600 10 -427 -540 -586 -598	-596 52 -670 16 -510 -590 -662 -670	-616 17 -640 7 -592 -610 -640 -640	-609 32 -640 15 -536 -620 -638 -640	-568 58 -670 92 -445 -580 -620 -670	30
20	-555 40 -619 19 -474 -570 -581 -613	-565 34 -639 47 -480 -570 -596 -631	-563 57 -648 29 -437 -560 -620 -639	-590 99 -670 3 -458 -650 -664 -669	-623 40 -680 3 -590 -600 -654 -677	-594 28 -639 18 -537 -595 -620 -637	-562 50 -676 148 -450 -570 -610 -650	20
10	-559 31 -619 25 -495 -560 -582 -610	-564 44 -639 48 -429 -570 -600 -631	-522 26 -570 14 -473 -520 -540 -567			-583 29 -620 3 -551 -580 -607 -618	-545 48 -636 146 -439 -550 -590 -621	10
0	-553 30 -610 77 -495 -550 -580 -610	-544 36 -599 11 -466 -550 -564 -594	-541 18 -570 9 -520 -540 -564 -570				-547 34 -610 112 -480 -550 -580 -608	0
10 S	-535 36 -610 73 -470 -540 -570 -606		-534 15 -560 5 -520 -530 -547 -558				-533 34 -610 109 -470 -540 -570 -600	10 S
20 S	-497 38 -560 17 -446 -490 -540 -557		-534 20 -570 7 -520 -520 -560 -569				-501 34 -570 89 -440 -500 -540 -570	20 S
30 S	-520 -520 -520 2 -520 -520 -520 -520	-485 5 -490 2 -480 -485 -488 -490	-528 17 -560 5 -511 -520 -541 -558				-488 29 -557 31 -446 -490 -520 -542	30 S
40 S	-503 15 -520 4 -481 -505 -515 -519		-487 21 -520 7 -461 -480 -510 -519	-510 10 -520 2 -500 -510 -517 -520			-490 20 -520 28 -460 -485 -510 -520	40 S
	-508 13 -520 4 -491 -510 -520 -520		-525 5 -530 2 -520 -525 -528 -530	-500 7 -510 4 -491 -500 -505 -509			-495 20 -529 21 -454 -490 -518 -526	
	-510 -510 -510 2 -510 -510 -510 -510		-520 10 -530 2 -510 -520 -527 -530	-507 9 -520 3 -500 -500 -514 -519			-497 16 -530 16 -473 -500 -510 -527	
	-500 10 -510 2 -490 -500 -507 -510		-510 1	-510 1			-480 21 -510 14 -450 -480 -509 -510	
	-510 -510 -510 2 -510 -510 -510 -510			-510 1			-484 20 -510 9 -460 -480 -510 -510	
	-520 1						-478 22 -520 6 -460 -470 -496 -517	
							-482 16 -500 6 -460 -490 -492 -499	
				-503 13 -520 4 -490 -500 -515 -519			-492 19 -520 15 -453 -490 -518 -520	
							-515 34 -579 15 -460 -520 -548 -574	
							-552 33 -610 20 -498 -560 -580 -610	
							-553 34 -609 24 -500 -565 -590 -601	

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

### STATIC AIR TEMPERATURE CLIMATOLOGY

FL 390

70 N

70 N					-510 22 -530 3 -482 -520 -527 -530	70 N
					-517 62 -668 26 -445 -495 -580 -655	
60					-524 64 -670 29 -450 -510 -570 -670	60
				-531 61 -667 8 -461 -525 -549 -653		
				-519 46 -637 22 -460 -515 -560 -619	-540 59 -678 18 -453 -530 -628 -670	
50				-540 26 -579 10 -487 -545 -560 -576	-519 27 -560 11 -482 -520 -544 -558	50
	-590 10 -600 2 -580 -590 -597 -600		-540 1	-557 53 -660 10 -502 -535 -619 -658	-548 70 -650 11 -460 -530 -638 -650	
40				-575 35 -610 2 -541 -575 -599 -609	-567 53 -649 6 -486 -585 -610 -645	40
	-570 29 -600 3 -532 -580 -594 -599		-500 -500 2 -500 -500 -500 -500	-510 10 -520 2 -500 -510 -517 -520	-523 12 -540 3 -510 -520 -534 -539	
30	-597 12 -610 3 -581 -600 -607 -610	-600 10 -610 2 -590 -600 -607 -610		-520 -520 4 -520 -520 -520 -520	-543 18 -579 10 -520 -540 -560 -576	30
	-610 -610 -610 -610 2 -610 -610 -610 -610	-598 4 -600 4 -591 -600 -600 -600	-520 24 -550 3 -491 -520 -540 -549		-558 31 -619 19 -510 -560 -590 -613	
20		-573 20 -590 4 -542 -580 -590 -590	-528 19 -550 4 -501 -530 -545 -549		-565 5 -570 2 -560 -565 -568 -570	20
		-535 5 -540 2 -530 -535 -538 -540	-540 1		-550 1	
10		-540 1	-540 1		-550 1	10
					-540 7 -550 4 -531 -540 -545 -549	
0			-535 5 -540 2 -530 -535 -538 -540		-538 4 -540 4 -531 -540 -540 -540	0
			-530 1		-540 12 -550 4 -521 -545 -550 -550	
10					-543 5 -550 3 -540 -540 -547 -550	10
					-540 -540 -540 -540 2 -540 -540 -540 -540	
20						20
				-540 1		
30		-540 20 -560 2 -521 -540 -554 -559	-553 15 -570 4 -531 -555 -565 -569	-583 41 -630 6 -531 -585 -630 -630		30
			-574 22 -600 5 -542 -580 -594 -599	-495 35 -530 2 -461 -495 -519 -529		
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 390

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

70 N

70 N	-543 31 -589 7 -500 -550 -561 -586						-533 32 -589 10 -484 -535 -560 -585	70 N
	-537 70 -668 15 -443 -510 -615 -659	-520 20 -540 2 -501 -520 -534 -539					-524 64 -670 43 -440 -500 -593 -670	
60	-554 72 -670 10 -462 -545 -642 -668	-520 22 -540 3 -492 -530 -537 -540					-531 64 -670 50 -450 -525 -586 -670	60
	-525 33 -560 6 -482 -525 -560 -560	-488 36 -550 11 -434 -480 -528 -548	-630 1	-596 61 -679 7 -504 -620 -642 -675	-591 61 -669 8 -471 -610 -629 -664	-520 1	-536 64 -680 74 -450 -530 -620 -675	50
50	-557 49 -639 10 -471 -545 -601 -635	-630 14 -640 3 -611 -640 -640 -640	-558 81 -660 4 -462 -555 -636 -657	-637 12 -650 3 -621 -640 -647 -650	-660 10 -670 2 -650 -660 -667 -670	-583 31 -610 4 -534 -595 -605 -609	-561 56 -669 47 -460 -550 -633 -661	50
	-635 17 -650 4 -611 -640 -650 -650	-578 55 -650 34 -443 -595 -630 -650	-575 61 -660 24 -459 -570 -650 -660		-700 1	-565 21 -590 4 -541 -565 -585 -589	-574 60 -689 91 -458 -580 -640 -660	40
40	-616 31 -640 7 -570 -640 -640 -640	-603 35 -659 49 -528 -610 -640 -650	-572 40 -630 5 -531 -550 -617 -628				-594 46 -658 71 -474 -610 -640 -650	40
	-579 37 -629 31 -496 -590 -610 -624	-572 48 -639 11 -474 -590 -604 -634	-577 17 -600 3 -560 -570 -590 -599				-569 42 -638 55 -490 -580 -610 -629	30
30	-558 33 -610 29 -510 -570 -590 -610	-535 5 -540 2 -530 -535 -538 -540	-590 10 -600 2 -580 -590 -597 -600				-556 33 -610 52 -510 -555 -590 -610	30
	-552 32 -600 12 -494 -550 -585 -600	-530 1	-583 9 -590 3 -571 -590 -590 -590				-561 34 -619 44 -490 -560 -600 -611	20
20	-570 1		-570 9 -580 5 -560 -570 -580 -580				-559 24 -590 16 -508 -565 -580 -590	20
	-570 -570 2 -570 -570 -570 -570		-560 10 -570 4 -550 -560 -570 -570	-568 4 -570 4 -561 -570 -570 -570			-558 14 -570 14 -533 -565 -570 -570	10
10	-540 1		-570 1	-556 5 -560 8 -550 -560 -560 -560			-553 9 -570 13 -540 -550 -560 -560	10
				-550 6 -560 6 -541 -550 -552 -559			-546 8 -560 10 -532 -560 -550 -558	0
0				-552 7 -580 6 -541 -550 -560 -560			-544 10 -560 12 -530 -540 -552 -560	0
				-554 7 -580 7 -541 -560 -560 -560			-548 12 -560 12 -522 -550 -560 -560	10
10				-558 8 -570 9 -550 -560 -567 -570			-554 10 -570 12 -540 -550 -562 -570	10
				-561 12 -580 9 -542 -560 -570 -578			-557 14 -580 11 -540 -560 -570 -578	20
20				-557 20 -580 6 -523 -560 -572 -579			-557 20 -580 6 -523 -560 -572 -579	20
				-555 5 -560 2 -550 -555 -558 -560			-550 8 -560 3 -540 -550 -557 -560	30
30				-580 1			-567 35 -630 13 -522 -560 -612 -630	30
							-551 44 -600 7 -468 -560 -590 -599	40 S
40 S								

LONGITUDE

345

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 470

TABULATED TEMPERATURES = °C \* 10

70 N

70 N						
					-500 -28 -540 -8 -454 -500 -529 -539	70 N
60					-503 29 -540 7 -461 -510 -540 -540	60
					-517 41 -608 26 -445 -505 -570 -595	
50					-536 41 -620 25 -470 -540 -572 -620	50
					-555 63 -650 11 -446 -550 -628 -648	
40	-600 1			-544 44 -600 9 -460 -550 -592 -600	-524 43 -609 9 -465 -530 -557 -602	40
	-583 5 -590 3 -580 -580 -587 -590			-561 34 -620 13 -500 -560 -583 -620	-580 -580 -580 2 -580 -580 -580 -580	
	-585 17 -610 6 -561 -585 -602 -609			-577 5 -580 3 -570 -580 -580 -580		
30	-640 -640 -640 -640 -640 -640 -640 -640			-605 5 -610 2 -600 -605 -608 -610		30
	-645 5 -650 2 -640 -645 -648 -650	-640 7 -650 4 -631 -640 -645 -649	-580 1			
20		-625 5 -630 2 -620 -625 -628 -630				20
10			-600 1		-600 1	10
			-610 1			
0						0
					-580 1	
10					-590 -590 -590 -590 -590 -590 -590 -590	10
					-610 1	
20						20
30						30
					-520 1	
40 S						40 S
	30E	60E	90E	120E	150E	180W 150W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 410

MEAN	LAT
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LAT.                  TABULATED TEMPERATURES = °C \* 10

70 N

70 N

70 N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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LONGITUDE

347

CODE:	MEAN	ST. DEV.	.3%	N
	98%	50%	16%	2%

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

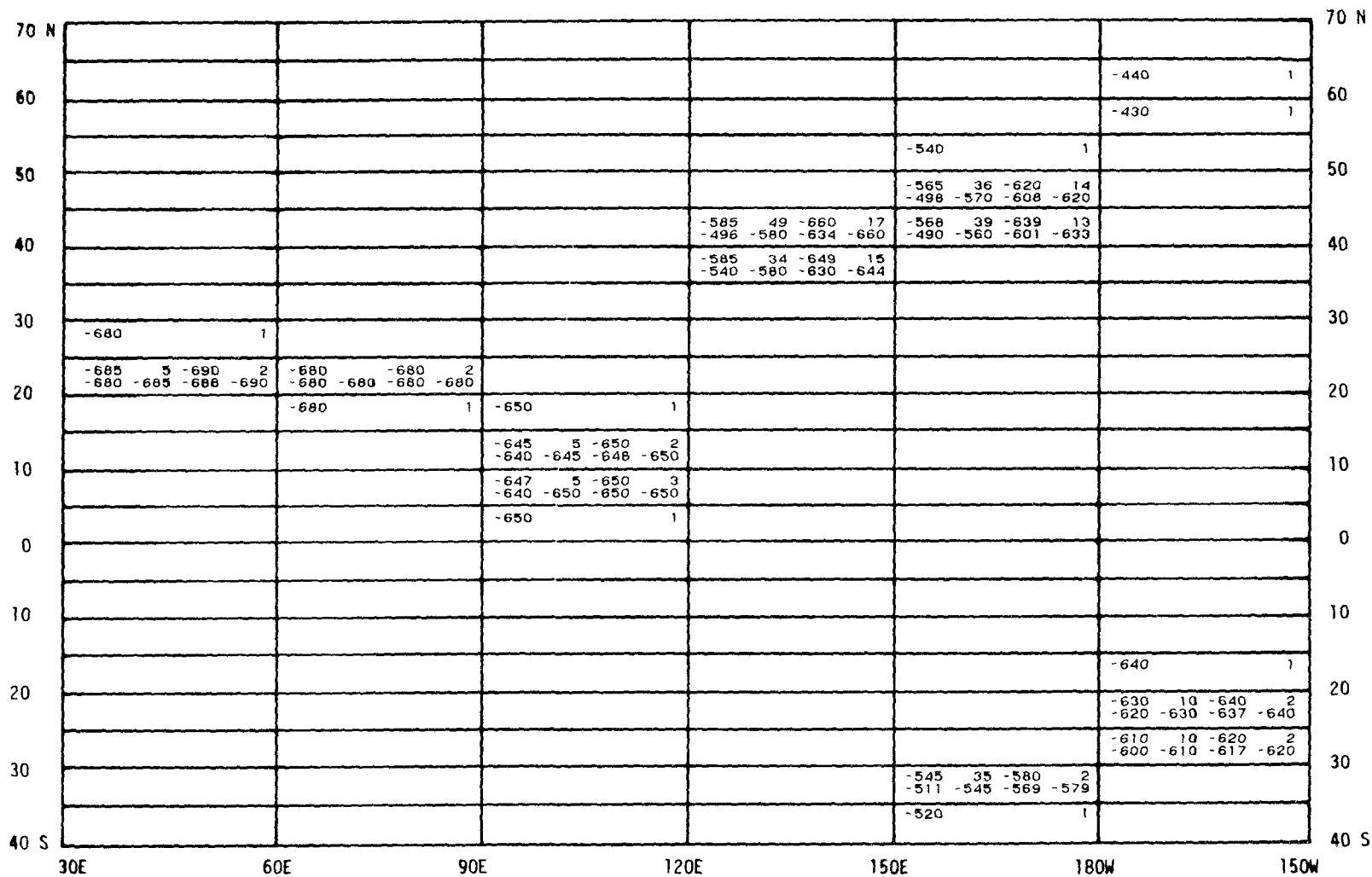
## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER

FL 430

LAT.



LONGITUDE



CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

NOVEMBER  
FL 430

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 270

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N	
60						60	
50						50	
40	-413 45 -470 3 -362 -410 -451 -468					40	
	-440 36 -470 3 -393 -460 -467 -470			-400 29 -440 17 -340 -400 -430 -440			
30	-377 24 -400 6 -334 -380 -400 -400			-370 28 -390 3 -332 -390 -390 -390		30	
	-328 28 -370 16 -276 -330 -360 -367	-343 5 -350 3 -340 -340 -347 -350					
20	-323 38 -350 3 -273 -350 -350 -350	-293 30 -339 10 -242 -300 -316 -336	-252 21 -280 9 -213 -260 -270 -278		-276 30 -348 55 -211 -280 -300 -339	20	
		-272 25 -300 5 -232 -280 -294 -299	-254 27 -280 5 -212 -260 -280 -280	-223 21 -250 3 -201 -220 -240 -249	-247 20 -280 6 -221 -245 -264 -278		
10			-228 19 -279 10 -210 -225 -230 -271	-210 14 -230 4 -191 -210 -220 -229	-260 20 -280 2 -260 -260 -260 -260	10	
		-268 36 -329 4 -241 -250 -292 -325	-250 1				
0			-237 20 -260 11 -200 -250 -250 -258			0	
10						10	
					-230 1 -192 -250 -257 -260		
20					-228 12 -240 8 -210 -230 -240 -240	-240 20 -260 2 -221 -240 -254 -259	20
					-270 1		
30					-250 1		30
			-303 17 -320 3 -281 -310 -317 -320	-343 23 -370 4 -320 -340 -365 -369	-311 35 -407 20 -254 -310 -340 -387		
40 S				-329 31 -380 11 -292 -330 -370 -378	-334 42 -390 7 -275 -310 -380 -389		40 S
	30E	60E	90E	120E	150E	180W	150W

LONGITUDE

350

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 270

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

LAT.	70 N	60	50	40	30	20	10	0	10	20	30	40 S
LONGITUDE	150W	120W	90W	60W	30W	0	30E	60E	90E	120E	150E	180
	-490 30 -520 2 -461 -490 -510 -519						-490 30 -520 2 -461 -490 -510 -519					
						-463 48 -539 7 -385 -460 -502 -535	-433 59 -539 9 -353 -420 -496 -535	-446 57 -540 16 -356 -445 -506 -540				
	-403 21 -430 3 -381 -400 -420 -429	-370 1	-435 5 -440 2 -430 -435 -438 -440			-451 31 -500 7 -411 -450 -481 -498	-432 36 -499 13 -372 -430 -471 -495					
		-408 38 -480 12 -362 -395 -447 -478	-413 52 -524 50 -290 -420 -460 -491			-418 33 -460 11 -356 -420 -454 -460	-413 48 -521 76 -300 -420 -460 -485					
	-380 36 -487 38 -305 -380 -420 -448	-359 33 -429 17 -300 -350 -394 -420	-380 1			-414 48 -470 5 -352 -420 -464 -469	-384 40 -470 81 -300 -380 -422 -470					
	-354 42 -439 17 -269 -360 -380 -430	-348 45 -439 30 -268 -350 -390 -434					-354 43 -440 56 -261 -360 -390 -439					
	-358 8 -370 4 -350 -355 -365 -369						-335 26 -370 23 -279 -340 -360 -370					
							-277 33 -350 77 -210 -280 -300 -350					
							-252 28 -299 19 -204 -250 -280 -296					
							-228 22 -279 16 -196 -225 -248 -274					
							-264 33 -329 5 -241 -250 -279 -324					
							-237 20 -260 11 -200 -250 -250 -258					
							-233 27 -260 4 -192 -240 -255 -259					
							-230 15 -259 10 -210 -230 -240 -256					
							-270 1					
							-250 1					
							-315 34 -407 27 -255 -310 -340 -389					
							-331 36 -389 18 -277 -320 -373 -387					

APPENDIX C  
STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER

FL 290

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N						70 N
60						60
50						50
40	-455 33 -500 8 -403 -465 -488 -499					40
	-454 35 -500 18 -384 -470 -483 -500			-441 31 -480 10 -384 -455 -466 -478	-490 -490 -490 2 -490 -490 -490 -490	
30	-435 39 -500 15 -373 -430 -488 -497			-420 1		30
	-360 25 -400 4 -331 -355 -381 -398	-390 12 -400 6 -371 -395 -400 -400				-333 26 -370 3 -310 -320 -354 -368
20	-350 11 -370 9 -340 -350 -360 -368	-326 22 -360 11 -300 -320 -354 -360	-306 17 -330 9 -282 -300 -327 -330			-324 30 -380 41 -278 -320 -356 -380
		-310 26 -369 9 -282 -300 -332 -365	-289 16 -320 7 -271 -280 -301 -318	-273 19 -300 4 -251 -270 -290 -299		-301 27 -350 8 -271 -290 -329 -347
10		-296 10 -310 5 -281 -300 -304 -309	-280 14 -310 9 -260 -280 -287 -307	-280 21 -319 7 -252 -270 -291 -316		-280 18 -310 6 -261 -270 -302 -309
		-279 30 -329 7 -241 -290 -301 -326	-278 4 -280 5 -271 -280 -280 -280			-263 23 -300 6 -241 -250 -292 -299
0			-266 20 -319 12 -242 -260 -280 -311			-264 22 -290 5 -241 -250 -290 -290
			-281 25 -349 12 -254 -270 -287 -341			-265 17 -280 4 -241 -270 -280 -280
10			-284 8 -300 5 -280 -280 -287 -298			-270 10 -280 4 -260 -270 -280 -280
			-280 1		-275 5 -280 2 -270 -275 -278 -280	-278 11 -290 6 -261 -280 -290 -290
20					-280 18 -310 11 -244 -280 -294 -308	-285 35 -320 2 -251 -285 -309 -319
			-300 1		-307 5 -310 3 -300 -310 -310 -310	
			-333 8 -340 4 -321 -335 -340 -340		-325 5 -330 2 -320 -325 -328 -330	
30			-320 1	-370 32 -419 7 -315 -380 -391 -416	-357 37 -448 18 -320 -340 -396 -440	
40 S				-380 23 -420 17 -340 -380 -400 -420	-383 30 -440 9 -343 -380 -414 -437	
	30E	60E	90E	120E	150E	180W

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 290

TABULATED TEMPERATURES = °C \* 10

MEAN LAT

70 N							
	-505 -15 -520 2 -491 -505 -515 -519				-500 1		-503 12 -520 3 -490 -500 -514 -519
60					-510 10 -520 2 -500 -510 -517 -520		-510 10 -520 2 -500 -510 -517 -520
	-510 1				-510 39 -570 9 -446 -510 -547 -567	-477 25 -510 9 -435 -470 -607 -510	-494 36 -569 19 -434 -490 -531 -563
50	-456 22 -490 5 -431 -450 -477 -488	-455 29 -509 6 -421 -455 -470 -505	-450 1	-456 37 -520 7 -420 -440 -501 -518	-486 46 -530 5 -422 -520 -524 -529	-491 38 -540 20 -408 -490 -530 -540	-475 40 -540 44 -417 -475 -521 -540
	-461 40 -529 10 -400 -470 -490 -523	-439 49 -518 64 -330 -460 -480 -510	-423 38 -460 4 -381 -425 -460 -460		-486 38 -540 31 -406 -490 -522 -540	-454 49 -540 117 -333 -460 -500 -530	
40	-419 40 -525 26 -355 -420 -450 -500	-409 46 -490 12 -350 -405 -452 -490	-450 -450 -450 2 -450 -450 -450 -450			-455 29 -490 10 -410 -470 -481 -490	-435 41 -523 80 -350 -435 -480 -500
	-384 22 -419 11 -338 -390 -400 -416	-394 33 -478 27 -335 -390 -420 -470					-404 38 -498 54 -331 -400 -435 -490
30	-367 24 -419 9 -332 -370 -377 -414				-360 1		-367 28 -419 23 -314 -370 -400 -411
							-326 28 -380 70 -280 -330 -360 -376
20							-297 26 -368 28 -255 -290 -320 -359
							-283 18 -319 27 -255 -280 -300 -315
10							-273 24 -328 18 -240 -280 -293 -320
							-265 21 -319 17 -240 -260 -284 -310
0							-277 24 -348 16 -243 -270 -280 -338
							-278 11 -300 9 -260 -280 -280 -297
10							-278 9 -290 9 -262 -280 -287 -290
	-290 1						-281 21 -320 14 -243 -280 -299 -317
20							-305 5 -310 4 -300 -305 -310 -310
							-330 8 -340 6 -320 -330 -340 -340
30							-359 37 -448 26 -315 -345 -390 -435
							-381 25 -438 26 -340 -380 -400 -430
40 S							
	150W	120W	90W	60W	30W	0	30E

LONGITUDE

353

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES \* °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER

FL 310

LAT.

70 N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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LONGITUDE

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 310

	MEAN	LAT
1960-1970	18.0	18.0
1971-1980	18.5	18.5
1981-1990	19.0	19.0
1991-2000	19.5	19.5
2001-2010	20.0	20.0
2011-2020	20.5	20.5
2021-2030	21.0	21.0
2031-2040	21.5	21.5
2041-2050	22.0	22.0
2051-2060	22.5	22.5
2061-2070	23.0	23.0
2071-2080	23.5	23.5
2081-2090	24.0	24.0
2091-2100	24.5	24.5

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N

60

50

40

30

20

10

0

10

20

30

40 S

**70 N**

60

50

40

30

20

10

0

10

20

50

LONGITUDE

## STATIC AIR TEMPERATURE CLIMATOLOGY

CODE :

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

DECEMBER

FL 330

LAT.

[illegible]

LONGITUDE



## APPENDIX C

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 330

MEAN LAT

LAT.

TABULATED TEMPERATURES = °C \* 10

70 N				-610 20 -630 2 -591 -610 -624 -629	-590 20 -610 2 -571 -590 -604 -609		-600 22 -630 4 -571 -600 -620 -629	70 N
60	-525 35 -560 2 -491 -525 -549 -559		-550 23 -570 6 -505 -560 -562 -569	-538 45 -590 5 -481 -550 -584 -589	-585 5 -590 2 -580 -585 -588 -590		-547 37 -590 15 -483 -560 -580 -590	60
50		-550 24 -580 7 -520 -560 -570 -579	-547 29 -580 3 -512 -550 -570 -579	-561 38 -600 8 -501 -570 -599 -600	-555 42 -619 13 -470 -560 -581 -613		-555 37 -618 31 -484 -560 -590 -608	50
40		-563 26 -600 4 -531 -560 -586 -598	-475 15 -490 2 -461 -475 -485 -489	-532 39 -590 13 -480 -540 -562 -590	-546 44 -619 25 -460 -550 -590 -615	-562 34 -619 5 -522 -560 -588 -616	-543 43 -620 50 -460 -550 -590 -620	40
30	-533 22 -550 6 -493 -545 -550 -550	-553 54 -600 6 -451 -565 -600 -600	-517 56 -570 7 -411 -520 -570 -570	-490 40 -570 15 -426 -490 -528 -567	-560 34 -600 9 -490 -560 -587 -598	-561 31 -629 8 -523 -560 -570 -622	-534 52 -628 54 -421 -550 -575 -620	30
20	-550 12 -560 4 -531 -555 -560 -560	-514 51 -580 31 -386 -530 -562 -580	-516 47 -580 60 -400 -525 -570 -580	-524 46 -609 9 -463 -520 -564 -604	-518 16 -540 5 -500 -520 -534 -539	-556 35 -620 18 -507 -540 -596 -620	-525 47 -620 135 -397 -530 -570 -610	20
10	-507 42 -589 43 -390 -510 -540 -582	-494 62 -589 27 -370 -510 -557 -585	-520 12 -540 4 -510 -515 -530 -539			-521 24 -569 10 -490 -520 -541 -566	-510 46 -600 147 -390 -510 -550 -590	10
0	-483 32 -549 49 -420 -480 -513 -540	-482 31 -539 19 -417 -480 -511 -533					-493 34 -560 107 -421 -490 -520 -560	0
10 S	-481 42 -550 33 -406 -470 -539 -550						-468 37 -550 81 -386 -470 -500 -550	10 S
20 S	-440 10 -450 2 -430 -440 -447 -450						-414 32 -487 114 -360 -410 -450 -480	20 S
30 S							-398 24 -459 43 -360 -400 -423 -452	30 S
40 S							-380 14 -409 32 -346 -380 -390 -404	40 S
							-378 15 -409 19 -347 -380 -390 -406	
							-376 10 -399 19 -360 -370 -390 -396	
							-378 16 -410 26 -355 -370 -400 -410	
							-375 18 -410 31 -350 -370 -400 -410	
							-373 9 -389 29 -351 -370 -380 -384	
							-377 19 -419 28 -340 -380 -390 -415	
	-400 1						-397 24 -449 30 -346 -400 -414 -444	
							-428 19 -478 36 -397 -430 -450 -466	
							-456 28 -526 67 -403 -460 -484 -510	
							-479 32 -528 53 -430 -480 -510 -520	

LONGITUDE

## STATIC AIR TEMPERATURE CLIMATOLOGY

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

DECEMBER

FL 350

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

DECEMBER  
FL 350

MEAN LAT

TABULATED TEMPERATURES = °C \* 10

70 N

[illegible]

LONGITUDE

359

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 370

TABULATED TEMPERATURES = °C \* 10

LAT.

[illegible]

LONGITUDE

360

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 370

MEAN LAT

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

70 N	-557 33 -580 3 -513 -580 -580 -580	-570 -570 -570 2 -570 -570 -570 -570	-610 45 -660 4 -561 -610 -655 -659	-657 5 -660 3 -650 -660 -660 -660			-602 49 -660 12 -521 -580 -660 -660	70 N
60	-536 32 -580 12 -484 -530 -580 -580	-562 44 -620 11 -484 -570 -614 -620	-628 15 -650 4 -611 -625 -640 -649	-638 16 -650 4 -612 -645 -650 -650	-627 5 -630 3 -620 -630 -630 -630		-576 51 -659 39 -480 -580 -630 -652	60
50	-590 68 -680 7 -520 -550 -680 -680	-579 58 -660 9 -480 -570 -634 -657	-500 1 -500 1	-550 43 -610 4 -501 -545 -591 -608	-572 46 -640 9 -522 -550 -634 -640		-582 63 -680 50 -499 -555 -662 -680	50
40	-560 52 -649 4 -521 -535 -597 -643	-567 69 -650 3 -484 -570 -624 -647	-513 40 -570 3 -480 -490 -544 -567	-544 58 -630 12 -462 -530 -620 -628	-560 36 -648 13 -520 -550 -591 -638	-600 10 -610 2 -590 -600 -607 -610	-541 62 -695 62 -432 -535 -602 -666	40
30	-605 46 -650 12 -501 -610 -650 -650	-614 40 -660 7 -545 -640 -641 -658	-543 41 -590 8 -460 -555 -578 -569	-572 54 -640 11 -482 -580 -630 -638	-595 51 -640 11 -504 -620 -640 -640	-586 43 -640 5 -516 -590 -621 -638	-574 59 -658 78 -450 -590 -640 -650	30
20	-607 24 -639 18 -550 -610 -630 -637	-552 67 -660 90 -406 -570 -610 -652	-534 53 -628 54 -440 -545 -585 -620	-570 1 -570 1	-564 47 -630 9 -512 -550 -627 -630	-593 37 -640 10 -524 -600 -626 -638	-556 62 -670 205 -431 -570 -620 -659	20
10	-555 49 -660 96 -460 -560 -610 -642	-566 50 -630 100 -430 -580 -610 -630					-584 22 -620 5 -561 -570 -607 -618	10
0	-546 46 -634 200 -440 -540 -600 -620	-541 45 -590 15 -428 -550 -570 -587					-544 46 -643 250 -440 -540 -590 -620	0
10 S	-534 50 -625 159 -432 -540 -590 -620						-529 47 -632 268 -440 -540 -580 -620	10 S
20 S	-506 38 -560 29 -429 -500 -545 -560						-505 38 -580 144 -439 -500 -550 -580	20 S
30 S	-513 22 -559 13 -482 -510 -540 -555						-496 24 -558 68 -460 -490 -520 -550	30 S
40 S	-498 13 -520 13 -480 -490 -511 -520						-488 15 -520 51 -460 -480 -510 -520	40 S
	-493 12 -510 12 -480 -490 -510 -510						-486 14 -519 45 -459 -480 -500 -511	
	-470 -470 -470 2 -470 -470 -470 -470						-482 12 -509 38 -460 -480 -490 -503	
	-470 -470 -470 2 -470 -470 -470 -470						-483 12 -500 28 -455 -490 -490 -500	
	-475 5 -480 2 -470 -475 -478 -480						-488 11 -510 34 -470 -490 -500 -510	
	-500 10 -510 2 -490 -500 -507 -510						-487 13 -519 40 -468 -490 -498 -512	
	-510 1						-487 18 -520 29 -456 -490 -500 -520	
							-493 17 -510 22 -454 -500 -510 -510	
							-508 19 -539 29 -474 -510 -525 -536	
							-528 29 -570 27 -460 -530 -550 -570	
							-539 38 -600 22 -455 -540 -570 -600	

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER

FL 390

LAT.

70 N						-580	1	70 N
						-534	63 -629 17	
60						-413 -550 -600 -624		60
					-548 31 -600 6	-552 46 -639 24		
					-504 -540 -576 -597	-453 -540 -593 -635		
50					-562 63 -727 22	-549 59 -706 17		50
					-474 -550 -600 -713	-476 -520 -604 -681		
					-541 55 -669 21	-575 63 -680 26		
					-480 -530 -596 -662	-470 -560 -650 -680		
40	-570 -570 -570 2			-526 15 -550 5	-574 76 -700 17	-568 52 -649 5		40
	-570 -570 -570 -570			-510 -530 -537 -548	-483 -550 -668 -700	-495 -570 -605 -644		
	-590 10 -600 2			-541 48 -629 12	-620 85 -700 4	-526 23 -560 8		
	-580 -590 -597 -600			-464 -540 -590 -621	-505 -640 -700 -700	-493 -520 -550 -559		
30	-570 10 -580 2			-528 15 -550 4	-483 21 -510 3	-505 5 -510 2		30
	-560 -570 -577 -580			-511 -525 -540 -549	-461 -480 -500 -509	-500 -505 -508 -510		
	-596 39 -630 5			-530 8 -540 3	-543 13 -550 4	-549 14 -569 28		
	-526 -610 -624 -629			-520 -530 -537 -540	-522 -550 -550 -550	-505 -550 -560 -565		
20	-610 -610 -610 2	-615 5 -620 2	-547 9 -560 3	-530	1	-529 33 -599 34		20
	-610 -610 -610 -610	-610 -615 -618 -620	-540 -540 -554 -559			-470 -530 -557 -593		
		-590	1	-540 14 -560 4	-520	1	-553 13 -570 7	
				-521 -540 -550 -559			-540 -550 -570 -570	
10			-553 9 -560 3			-543 10 -550 10		10
			-541 -560 -560 -560			-522 -550 -550 -550		
			-553 9 -560 3			-546 9 -560 17		
			-541 -560 -560 -560			-530 -550 -554 -560		
0			-540 18 -570 6			-547 5 -559 29		0
			-512 -540 -554 -568			-540 -550 -550 -554		
						-548 8 -560 32		
						-530 -550 -560 -560		
10						-546 9 -560 24		10
						-530 -550 -550 -560		
						-544 16 -579 23		
						-510 -540 -560 -576		
20						-544 12 -570 13		20
						-530 -540 -552 -570		
				-490 -490 -490 2		-563 29 -610 6		
				-490 -490 -490 -490		-531 -560 -586 -607		
30			-530 29 -570 3	-554 10 -570 5	-560 22 -580 3			30
			-501 -520 -554 -568	-541 -550 -564 -569	-532 -570 -577 -580			
		-570	1	-552 12 -570 5	-564 37 -657 20			
				-540 -550 -564 -569	-495 -565 -590 -637			
40 S				-547 12 -560 3	-573 47 -649 19			40 S
				-531 -550 -557 -560	-487 -580 -620 -646			

30E

60E

90E

120E

150E

180W

150W

LONGITUDE

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 390

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

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40 S

40S

-565 11 -580 4 -551 -565 -575 -579			-590 1			-572 13 -590 6 -551 -575 -582 -589
-518 49 -580 9 -435 -520 -567 -578	-600 57 -640 3 -525 -640 -640 -640		-580 1	-605 5 -610 2 -600 -605 -608 -610		-541 63 -640 32 -416 -555 -600 -640
-581 41 -649 13 -522 -580 -621 -645	-556 34 -609 7 -504 -550 -581 -606		-581 64 -710 10 -522 -560 -643 -708	-545 46 -630 16 -489 -525 -616 -627		-559 48 -708 76 -480 -540 -610 -675
-590 50 -630 3 -524 -620 -627 -630	-540 16 -560 4 -521 -540 -555 -559	-515 25 -540 2 -491 -515 -532 -539	-515 5 -520 6 -510 -515 -520 -520	-540 70 -649 4 -463 -525 -597 -643	-577 69 -679 7 -485 -570 -651 -676	-553 60 -726 65 -470 -540 -618 -704
-569 80 -709 14 -480 -560 -658 -702	-509 22 -550 7 -481 -500 -531 -548	-513 35 -570 6 -463 -510 -546 -567			-543 38 -580 4 -501 -545 -580 -580	-553 64 -703 78 -470 -535 -634 -680
-584 70 -689 18 -480 -595 -663 -687	-564 60 -670 75 -445 -580 -630 -665	-538 53 -629 33 -443 -540 -600 -624		-545 25 -570 2 -521 -545 -562 -569	-575 42 -620 11 -502 -580 -614 -620	-561 61 -700 168 -450 -560 -620 -687
-543 48 -659 39 -493 -520 -590 -652	-574 56 -670 95 -469 -580 -630 -670	-600 48 -660 6 -541 -595 -660 -660		-630 1	-583 39 -620 3 -533 -600 -614 -619	-565 57 -700 170 -470 -570 -620 -670
-550 40 -627 90 -478 -540 -600 -620	-548 36 -600 13 -482 -560 -581 -598			-615 5 -620 2 -610 -615 -618 -620	-590 1	-548 40 -627 117 -473 -540 -600 -620
-543 50 -630 88 -430 -550 -601 -630						-546 44 -630 128 -430 -550 -590 -630
-533 34 -609 23 -472 -530 -565 -601						-537 37 -618 65 -470 -530 -578 -610
-553 24 -600 8 -523 -545 -578 -597						-550 21 -599 21 -520 -540 -570 -596
-552 12 -570 12 -532 -550 -562 -570						-548 12 -570 25 -525 -550 -560 -570
-547 7 -560 13 -532 -550 -550 -558						-547 9 -560 33 -530 -550 -559 -560
-545 5 -550 4 -540 -545 -550 -550						-545 9 -569 39 -525 -550 -550 -562
-547 9 -560 3 -540 -540 -554 -559						-548 8 -560 35 -530 -550 -560 -560
-550 10 -560 4 -540 -550 -560 -560						-546 9 -560 28 -530 -550 -557 -560
-550 16 -570 4 -531 -550 -565 -569						-545 16 -579 27 -510 -540 -560 -575
-540 1						-544 12 -570 14 -530 -540 -549 -570
						-545 40 -609 8 -490 -540 -580 -606
						-549 24 -580 11 -504 -550 -570 -578
						-562 33 -655 26 -500 -560 -590 -630
						-570 45 -649 22 -488 -570 -620 -646

150W

120W

90W

60W

30W

0

30E

LONGITUDE

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

FL 410

70 N

70 N						
					-510 -50 -560 -2 -462 -510 -544 -558	70 N
60						60
				-548 13 -570 5 -531 -550 -557 -568	-540 19 -560 4 -512 -545 -555 -559	
				-539 67 -679 21 -424 -540 -614 -672	-581 54 -659 7 -488 -590 -622 -655	
50						50
				-544 66 -679 23 -464 -520 -615 -671	-575 39 -639 6 -515 -575 -600 -635	
	-560 1			-543 54 -620 12 -467 -520 -612 -620	-525 63 -639 11 -454 -500 -594 -632	-625 45 -670 2 -582 -625 -656 -668
40						40
	-560 1			-543 42 -629 15 -468 -540 -585 -622		-498 18 -520 4 -472 -500 -510 -519
	-598 62 -680 12 -512 -595 -672 -680			-565 15 -580 2 -551 -565 -575 -579		
30						30
	-589 69 -670 10 -502 -585 -666 -670			-585 5 -590 2 -580 -585 -588 -590	-590 1	-557 5 -560 3 -550 -560 -560 -560
	-577 45 -639 3 -540 -550 -611 -636	-593 38 -650 6 -560 -575 -642 -649	-598 9 -610 6 -590 -595 -610 -610		-597 5 -600 3 -590 -600 -600 -600	-590 59 -670 7 -488 -590 -651 -668
20						20
		-593 29 -630 4 -561 -590 -620 -629	-600 8 -610 6 -590 -600 -610 -610		-600 -600 -600 -600 -600 -600 -600 -600	-617 12 -630 3 -601 -620 -627 -630
			-605 9 -620 8 -591 -605 -610 -619	-610 1		-603 7 -610 9 -592 -600 -610 -610
10						10
			-609 9 -620 8 -600 -605 -620 -620			-591 10 -610 11 -572 -590 -600 -608
			-605 17 -620 4 -581 -610 -620 -620			-586 9 -600 11 -570 -590 -590 -598
0						0
						-597 7 -610 9 -590 -600 -600 -608
						-597 9 -610 15 -583 -600 -608 -610
10						10
						-603 13 -639 18 -583 -600 -610 -633
						-598 19 -640 30 -566 -590 -620 -640
20						20
						-588 27 -640 19 -541 -580 -611 -640
					-582 32 -649 9 -542 -570 -607 -644	-580 28 -648 14 -540 -575 -608 -640
30						30
					-582 40 -649 24 -494 -585 -616 -645	
					-578 50 -659 36 -480 -575 -630 -653	
40 S						40 S
30E	60E	90E	120E	150E	180W	150W

LONGITUDE



APPENDIX C

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 410

LAT.

MEAN

LAT

TABULATED TEMPERATURES = °C \* 10

70 N

70 N

						-510	50	-560	2
						-462	-510	-544	-558
-613    46 -690    9 -542 -620 -659 -687	-527    53 -639    7 -480 -510 -563 -630					-564	55	-689	25
						-480	-550	-622	-680
-615    25 -640    2 -591 -615 -632 -639	-532    49 -610    19 -454 -530 -592 -610	-533    21 -560    3 -511 -530 -550 -559	-510    10 -520    2 -500 -510 -517 -520			-544	59	-677	54
						-431	-540	-610	-660
-629    38 -689    11 -566 -640 -658 -686	-550    57 -648    14 -473 -560 -609 -640	-543    53 -650    13 -475 -540 -594 -648		-510	1	-570		1	
						-561	63	-688	69
						-470	-560	-640	-676
-626    43 -679    13 -530 -640 -660 -675	-554    70 -690    20 -464 -540 -630 -690	-536    39 -654    33 -476 -540 -569 -622				-588	41	-620	4
						-524	-605	-620	-620
						-556	62	-690	96
						-460	-540	-630	-681
-598    61 -690    16 -510 -600 -656 -690	-588    52 -679    23 -489 -600 -640 -671	-550    31 -580    4 -503 -560 -575 -579				-581	39	-640	10
						-522	-585	-621	-638
						-573	55	-690	73
						-474	-570	-630	-686
-587    32 -658    27 -530 -590 -618 -650	-578    22 -610    4 -551 -575 -596 -608					-590	24	-620	3
						-561	-590	-610	-619
						-588	41	-680	48
						-519	-585	-620	-680
-583    51 -650    32 -472 -590 -630 -650						-583	53	-870	48
						-479	-585	-640	-670
-579    47 -649    24 -474 -575 -620 -645						-586	44	-667	49
						-479	-590	-826	-851
-585    21 -620    17 -550 -590 -604 -620						-593	21	-630	34
						-550	-600	-610	-630
-602    11 -820    11 -582 -600 -610 -618						-603	9	-620	29
						-586	-600	-610	-620
-602    4 -610    5 -600 -600 -604 -609						-599	12	-620	24
						-575	-600	-610	-620
						-591	14	-620	15
						-570	-590	-600	-620
						-587	7	-610	8
						-590	-600	-600	-608
						-597	9	-610	15
						-583	-600	-608	-610
						-603	13	-639	18
						-583	-600	-610	-633
						-598	19	-640	30
						-566	-590	-620	-640
						-588	27	-640	19
						-541	-580	-611	-640
						-581	30	-650	23
						-540	-570	-610	-650
						-582	40	-649	24
						-494	-585	-616	-645
						-578	50	-659	36
						-480	-575	-630	-653

40 S

150W

120W

90W

60W

30W

0

30E

40S

LONGITUDE

365

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER

FL 430

**CODE :**

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

TABULATED TEMPERATURES = °C \* 10

LAT.

70 N							70 N
60							60
50						-503 17 -520 3 -481 -510 -517 -520	50
40						-514 48 -599 5 -462 -510 -549 -594	40
30						-568 30 -619 5 -532 -570 -588 -616	30
20						-523 41 -570 3 -472 -530 -557 -568	20
10						-575 37 -630 6 -515 -575 -606 -627	10
0						-627 19 -640 3 -602 -640 -640 -640	0
10 S	-607 59 -689 3 -560 -570 -652 -685					-637 5 -640 3 -830 -640 -840 -640	10 S
20 S	-600 52 -689 4 -561 -575 -637 -683	-618 31 -660 6 -572 -620 -652 -659	-633 9 -640 3 -621 -640 -640 -640	-637 5 -640 3 -630 -640 -840 -840		-620 1	20 S
30 S		-647 19 -660 3 -622 -660 -660 -660	-648 4 -650 6 -641 -650 -650 -650			-640 10 -650 2 -630 -640 -647 -650	30 S
40 S			-655 5 -660 6 -650 -653 -660 -660			-630 -630 -630 -630	40 S
50 S			-647 11 -660 6 -631 -645 -660 -660			-630 1	50 S
60 S			-653 12 -670 3 -640 -650 -664 -669			-640 10 -650 2 -630 -640 -647 -650	60 S
70 S						-635 5 -640 2 -830 -635 -638 -640	70 S
80 S						-640 1	80 S
90 S						-656 14 -670 5 -640 -660 -670 -670	90 S
100 S						-662 12 -670 12 -634 -670 -670 -670	100 S
110 S						-670 10 -680 2 -660 -670 -677 -680	110 S
120 S						-575 35 -610 2 -541 -575 -599 -609	120 S
130 S						-587 50 -669 18 -499 -580 -640 -664	130 S
140 S						-597 46 -678 30 -507 -605 -634 -668	140 S
150 S							150 S

LONGITUDE

CODE:

MEAN	ST. DEV.	.3%	N
98%	50%	16%	2%

## APPENDIX C

## STATIC AIR TEMPERATURE CLIMATOLOGY

DECEMBER  
FL 430

LAT.

TABULATED TEMPERATURES = °C \* 10

MEAN

LAT

70 N

70 N

60

60

50

50

40

40

30

30

20

20

10

10

0

0

10

10

20

20

30

30

40 S

40S

				-575 5 -580 2	-500 -500 -500 2		-538 38 -580 4
				-570 -575 -578 -580	-500 -500 -500 -500		-500 -535 -575 -579
				-560 10 -570 2	-555 5 -560 2		-534 30 -570 7
				-550 -560 -567 -570	-550 -555 -558 -560		-484 -550 -560 -569
				-571 60 -640 9	-560 1		-551 60 -640 15
				-468 -570 -630 -638			-460 -550 -628 -637
				-590 50 -630 3	-559 51 -650 9		-560 49 -649 20
				-524 -620 -627 -630	-486 -550 -618 -648		-474 -550 -620 -646
				-535 25 -560 2	-580 25 -610 5		-577 42 -650 16
				-511 -535 -552 -559	-551 -570 -610 -610		-510 -570 -622 -647
				-586 32 -630 7	-615 30 -650 6		-604 34 -650 16
				-534 -590 -620 -629	-563 -630 -634 -648		-539 -610 -636 -647
				-597 33 -620 3			-614 41 -689 10
				-553 -620 -620 -620			-552 -620 -640 -681
							-622 34 -688 18
							-563 -630 -650 -680
							-645 12 -660 11
							-622 -650 -654 -660
							-651 10 -660 7
							-632 -650 -660 -660
							-647 10 -660 7
							-631 -650 -660 -660
							-648 13 -670 5
							-631 -650 -657 -668
							-635 5 -640 2
							-630 -635 -638 -640
							-640 1
							-656 14 -670 5
							-640 -660 -670 -670
							-662 12 -670 12
							-634 -670 -670 -670
							-670 10 -680 2
							-660 -670 -677 -680
							-622 45 -660 3
							-548 -640 -660 -660
							-587 50 -669 16
							-499 -580 -640 -664
							-597 46 -678 30
							-507 -605 -634 -668

150W

120W

90W

60W

30W

0

30E

LONGITUDE

1. Report No. NASA CR-168106		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle  Flight Summaries and Temperature Climatology at Airliner Cruise Altitudes from GASP Data				5. Report Date  February 1985	
				6. Performing Organization Code	
7. Author(s)  G.D. Nastrom and W.H. Jasperson				8. Performing Organization Report No.  None	
				10. Work Unit No.	
9. Performing Organization Name and Address  Control Data Corporation P.O. Box 1249 Minneapolis, Minnesota 55440				11. Contract or Grant No.  NAS 3-21249	
				13. Type of Report and Period Covered  Contractor Report	
12. Sponsoring Agency Name and Address  National Aeronautics and Space Administration Washington, D.C. 20546				14. Sponsoring Agency Code  505-40-22	
15. Supplementary Notes  Final report. Project Manager, J.D. Holdeman, Internal Fluid Mechanics Division, NASA Lewis Research Center, Cleveland, Ohio 44135. Corrected copy.					
16. Abstract  Temperature data obtained by the Global Atmospheric Sampling Program (GASP) during the period March 1975 to July 1979 have been compiled to form flight summaries of static air temperature and a geographic temperature climatology. The flight summaries include the height and location of the coldest observed temperature and the mean flight level, temperature and the standard deviation of temperature for each flight as well as for flight segments. These summaries are ordered by route and month. The temperature climatology was computed for all statistically independent temperature data for each flight. The grid used consists of 5° latitude, 30° longitude and 2000 feet vertical resolution from FL270 to FL430 for each month of the year. The number of statistically independent observations, their mean, standard deviation and the empirical 98, 50, 16, 2, and 0.3 probability percentiles are presented.					
17. Key Words (Suggested by Author(s)) Atmospheric temperature; Aircraft fuels; Temperature climatology; Aircraft measurements; Global Atmospheric Sampling Program (GASP); Meteorological parameters				18. Distribution Statement  Unclassified - unlimited STAR Category 47	
19. Security Classif. (of this report)  Unclassified		20. Security Classif. (of this page)  Unclassified		21. No. of pages  368	
				22. Price*  A16	